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Also in this issue

17 Practice Management

Roundtable: Expert Perspectives on X-Ray Over-Read Strategies in Urgent Care

22 Case Report

Ocular Arteriovenous Malformation Manifesting as Proptosis

Evaluation of Scrotal Pain in the Urgent Care Setting

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The Future Without Flu: Will Public Health Gains Cause Business Ills?



t's well known that the retail industry has a nasty habit of overreliance on the holiday season to buffer slower sales throughout the year. When the economy is strong, retail sales typically follow, and investors are happy. When the economy

falters or when brick-and-mortar retail is disrupted by lowercost, more-convenient alternatives, investors feel a bit under the weather. Similarly, the urgent care dilemma has always been a relative dependence on flu season to account for whatever slim and diminishing margins exist in our business. Publicly, none of us would wish illness on our communities, but privately, you hear the chatter. Consider this common phrase: "Worst flu season in years!" Depending on the context, this could reflect a bad flu season for business or a bad flu season for patients. Likewise, you wouldn't want to be caught celebrating a "great" flu season, would you?

Yet the business realities are there, and unless we find a way to kick the habit, our dependence on flu is likely to contradict our mission to heal. By most measures, seasonal spikes in flu cases account for a volume lift of anywhere from 25% to 50% over the course of 6 to 8 weeks. If a typical clinic sees 40 patients per day, then it might expect 50 to 60 patients per day during flu season. At U.S.\$130 per visit, that's about U.S.\$75,000 to U.S.\$150,000 direct to the bottom line, or almost 5% to 10% of annual revenue. That amount could easily be your entire margin. Therefore, in a typical urgent care business, a year without flu is essentially a year without business.

Although many urgent care businesses can weather a slow flu season here and there, what about a scenario in which influenza could be nearly eradicated, year after year? How, you ask? Scientists appear on track to developing a vaccine that could produce lifetime immunity. Researchers are close to targeting a part of the hemagglutinin protein that is much less vulnerable to mutation, and therefore more likely to trigger a lifelong immunity. Studies in mice and monkeys using this target have demonstrated some exciting results. Though many more years of study are needed, scientists will be sufficiently motivated to find answers. Influenza, after all, is a massive public health problem and causes enough morbidity and mortality (not to mention health-care-related costs) that funding for research for a universal vaccine is likely to be robust. Even if the research falls short, public health officials have made significant strides toward better seasonal vaccination rates, especially among the most vulnerable patient populations and, importantly, health-care workers themselves. Mandatory vaccination initiatives for health-care workers is a relatively new phenomenon and may be working. In addition, better surveillance of circulating influenza strains is helping vaccine makers create more effective vaccines, and multivalent and high-dose approaches also appear to be helping the cause. Thus, a future that depends on flu cases to maintain profitability is nothing more than fool's "cold"!

A common mistake that urgent care operators make is to overprepare for flu season, which usually means overstaffing. Another common mistake is to artificially stretch the season, and the bloated staffing that goes with it, from October to April. Perhaps it's time we reimagine our business to reflect the more typical business realities that exist from January through December. The majority of the strain on our business occurs from Thanksgiving through New Year's Day, even in a heavy flu season. Sure, there is a smaller seasonal lift from October through November and again from January through April, but the variance is much more manageable. It's far more important, then, that we have a sustainable staffing level for 11 months a year than that we be staffed adequately for the 4-week surge that may not even come. A disciplined look at the business with an eye toward the base case for volume will help the urgent care operator weather a year without flu. And, perhaps someday, a lifetime without it.

Lee A. Resnick, MD, FAAFP Editor-in-Chief, JUCM, The Journal of Urgent Care Medicine



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VOLUME 10, NUMBER 7



CLINICAL

8 Evaluation of Scrotal Pain in the Urgent Care Setting

Scrotal pain is an indicator for several conditions, all of which can cause significant morbidity. It is especially important to assess for the presence of testicular torsion, epididymitis, and prostatitis in patients presenting with scrotal pain.

Jeremy Hawkins, MD, Brit Long, MD, and Alex Koyfman, MD, FAAEM

PRACTICE MANAGEMENT

17 Roundtable: Expert Perspectives on X-Ray Over-Read Strategies in Urgent Care

When offering radiography, urgent care operators should be strategic about when and how to read images in-house versus sending them out for over-reads. Our experts discuss the relevant factors.



Alan A. Ayers, MBA, MAcc, Victor Chou, MD, David Cohen, MD, Soraya Nasraty, MD, MMM, CPE, and Lee A. Resnick, MD, FAAFP

CASE REPORT

22 Ocular Arteriovenous Malformation Manifesting as Proptosis



Proptosis can be caused by a variety of vascular, infectious, endocrine, and neoplastic diseases that threaten vision or pose a risk of serious systemic complications or death. Do you know what they are?

Armin Gollogly, MD, Brian Zipser, MD, Wendy Huang, MD, FAAO, FAAP, Christopher M. Fecarotta, MD, FAAO, FAAP, FCPP, and Mark Richman, MD, MPH

IN THE NEXT ISSUE OF JUCM

Is it irritable bowel syndrome, ischemic colitis, or something else causing your patient's abdominal pain and fever? It just might be diverticulitis. Jilian Nicholas, DO, and Christopher Tangen, DO, will update you on the latest treatment recommendations.

D E P A R T M E N T S

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- **7** From the UCAOA President
- 28 Abstracts in Urgent Care
- **33** Health Law and Compliance
- 35 Insights in Images
- 40 Coding Q&A
- 45 Developing Data

CLASSIFIEDS

42 Career Opportunities

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Mission Statement

JUCM The Journal of Urgent Care Medicine 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 of America and the Urgent Care College of Physicians, JUCM seeks to provide a forum for the exchange of ideas and to expand on the core competencies of urgent care medicine as they apply to physicians, physician assistants, and nurse practitioners.

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Privately, we in urgent care acknowledge that a bad flu season for patients is a good financial season for our industry. Editor-in-Chief Lee Resnick writes that our dependence on flu is likely to contradict our mission to heal, because treating patients with the flu can represent as much as 10% of annual revenue for some centers. But scientists are working now on a vaccine that might produce lifetime immunity to influenza. Resnick urges us to rethink our business realities before that inoculation becomes available.

Determining the etiology of scrotal pain in urgent care patients can be difficult because several disease processes that can cause it have

similar clinical presentations. Jeremy Hawkins, MD, Brit Long, MD, and Alex Koyfman, MD, FAAEM, explain what to look for during examinations and what the indications are for referral to an emergency department.



Hawkins is Chief Resident in Emergency Medicine/Family Medicine at LSU Health Sciences Center, Shreveport, LA; Long is Chief Resident in the Department of Emergency Medicine at San Antonio Military Medical Center at Fort Sam Houston, TX; and Koyfman is an Assistant Professor in the Department of Emergency Medicine at the University of Texas Southwestern Medical Center and Attending Physician at UT Southwestern Medical Center/Parkland Memorial Hospital in Dallas, TX.







Victor Chou, MD, David Cohen, MD, Soraya Nasraty, MD, MMM, CPE, and Lee A. Resnick, MD, FAAFP, in discussing the factors to consider when choosing an over-read service.

Ayers is Practice Management Editor of the

Radiography is an essential serv-

ice differentiating urgent care cen-

ters from primary care, enabling

Journal of Urgent Care Medicine, a member of the board of directors of the Urgent Care Association of America, and Vice President of Strategic Initiatives for Practice Velocity, LLC. Chou is Lead Physician at Lake After Hours Urgent Care in Denham Springs, LA; Cohen is Medical Director for Teleradiology Specialists in Phoenix, AZ; Nasraty is Medical Director for Norton Immediate Care Centers and Risk & Safety—Norton Medical Group; and Resnick is Editor-in-Chief of the Journal of Urgent Care Medicine. Is the patient's proptosis slowly progressive, or is it life-threatening? Armin Gollogly, MD, Brian Zipser, MD, Wendy Huang, MD, FAAO, FAAP, Christopher M. Fecarotta, MD, FAAO, FAAP, FCPP, and Mark Richman, MD, MPH, share the details of a case of proptosis, outlining the possible eti-





ologies and noting the indications for semi-urgent follow-up versus emergency transfer.

Gollogly is an Emergency Medicine Resident at Long Island Jewish Medical Center, New Hyde Park, NY; Zipser is an Associate Professor of Medicine at David Geffen School of Medicine at UCLA, Olive View-UCLA Medical Center Department of Radiology, Sylmar, CA; Huang is an Assistant Professor in the Department of Pediatric Ophthalmology and Strabismus, New York Eye and Ear Infirmary of Mount Sinai, New York, NY; Fecarotta is a Clinical Assistant Professor of Ophthalmology at SUNY Downstate Medical Center, New York, NY; and Richman is an Associate Professor of Medicine in the David Geffen School of Medicine at UCLA, Olive View-UCLA Medical Center Department of Medicine, Sylmar, CA.

Also in this issue:

In *Health Law and Compliance*, **Damaris Medina**, **Esq.**, and **Chloe Ghoogassian**, **Esq.**, describe how urgent care centers can protect themselves from whistle-blowers by identifying potentially litigious employees, having a well-publicized compliance program, and establishing internal reporting procedures.

Medina is a health-care attorney in the Los Angeles-based law firm of Michelman & Robinson, LLP, and Ghoogassian is an associate there.

Sean M. McNeeley, MD, and the Urgent Care College of Physicians review new reports from the literature on the reliability of telemedicine for assessing ill children, the link between socioeconomic status and methicillin-resistant *Staphylococcus aureus* infections, the use of mindfulness meditation in treating back pain, and more.

In Coding Q&A, **David Stern, MD, CPC**, discusses prolongedservices codes from *Current Procedural Terminology*, for when providers spend extra time with patients.

Last month, our *Developing Data* piece provided statistics on the top 20 most-prescribed medications in 2014 at U.S. urgent care centers. This month, we continue with the next 20.

Celebrate National Urgent Care Awareness Month this May



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*Medical Expenditure Panel Survey, 2011

**Based on 2014 data from the UCAOA 2015 Benchmarking Survey



2015: A Year of Advocacy for You in Review

ROBERT R. KIMBALL, MD, FCFP

The year has flown by, and thanks to a lot of dedicated and selfless volunteers and a fabulous staff, UCAOA continues to grow and thrive. There are more than 900 UCAOA Certified Urgent Care Centers and 267 UCAOA Accredited Urgent Care Centers. Our membership is up 11% compared with 2014, and we are financially stronger, with an equity growth of 15% over the year 2014.

We are making steady progress on the policy and legislative front. On our very successful trip to Washington DC last fall, your representatives met with agencies, associations, and legislative offices that are germane to our industry. We now have CQ State Track to monitor state legislative and regulatory issues that may be of interest to—or pose barriers for—the urgent care industry. We still need liaisons in many states to review these reports from their unique local perspective. Please contact Tonia Trimuel (ttrimuel@ucaoa.org) if you can help.

We also saw the launch of our first state chapter, with Michigan leading the way. We hope other states and regions will join us in this endeavor, which ultimately strengthens our collective ability to advocate. Speaking about regions, I was privileged to attend the first regional meeting hosted by the Northeast Regional Urgent Care Association (NERUCA), which was educational, informative, and fun. We hope that our ties to this organization will only strengthen going forward. Incidentally, we will host our first regional meeting in Philadelphia this summer. It is the exciting culmination of several years' work by our education committee, and we hope that the topics will appeal to many of you who live in the area. We plan to offer these smaller meetings on a rotating basis across the country. Look for more information online and in your mailbox over the next several months.

On another front, our public relations efforts to tell the story of urgent care have resulted in more than 204 million impres-



Robert R. Kimball, MD, FCFP, is serving as president of the Urgent Care Association of America from 2015 through 2016. He is Medical Director of Piedmont Healthcare Urgent Care, Statesville, NC.

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"Our . . . efforts to tell the story of urgent care have resulted in more than 204 million impressions."

sions (interactions between audience members and content) in media such as the *Wall Street Journal*, Fox News, the *Chicago Tribune*, the *Los Angeles Times*, and even *Reader's Digest*! We continue to successfully make the case that for many patients, *your* urgent care center—rather than the emergency department—is the solution for treatment of non-life-threatening conditions.

Democracy is alive and well in your organization. The board of directors election takes place at the annual meeting in April. The nominating committee has come up with some excellent candidates, and we have seen solid interest with additional nominations from the membership, which makes for a very robust election and strengthens your board. Remember, there are lots of other ways to get involved in your organization, including serving as state liaison and working on various committees that are continually looking for fresh perspectives. I hope to see you all in Orlando in April. Come prepared to learn, interact with your peers, and have lots of fun. Please make time to come to our first annual awards dinner.

Clinical

Evaluation of Scrotal Pain in the Urgent Care Setting

Urgent message: Evaluating patients with acute scrotal pain can be a challenge for clinicians in the outpatient setting because several conditions indicated by it can cause significant morbidity. Performing a thorough but focused medical history and physical examination and considering certain diagnoses, including testicular torsion, epididymitis, and prostatitis, are imperative when assessing these patients.

JEREMY HAWKINS, MD, BRIT LONG, MD, and ALEX KOYFMAN, MD, FAAEM

Introduction

valuation of acute scrotal pain is often challenging for clinicians because of various overlapping clinical presentations from multiple disease processes. The precise epidemiology of acute scrotal pain in patients who present for outpatient evaluation is largely unknown. The most critical component of evaluating all patients with acute scrotal pain is to promptly identify those who require emergency intervention. Lower genitourinary anatomy is important to understand when evaluating these patients. Structures that may be involved include the testis, appendix testis, tunica vaginalis, epididymis, spermatic cord, and prostate gland. The differential diagnosis of acute scrotal pain includes numerous conditions (Table 1).

Jeremy Hawkins, MD, is Chief Resident in Emergency Medicine/Family Medicine at LSU Health Sciences Center, Shreveport, Louisiana. Brit Long, MD, is Chief Resident in the Department of Emergency Medicine at San Antonio Military Medical Center at Fort Sam Houston, Texas. Alex Koyfman, MD, FAAEM, is Assistant Professor in the Department of Emergency Medicine at the University of Texas Southwestern Medical Center and Attending Physician at UT Southwestern Medical Center/Parkland Memorial Hospital in Dallas, Texas.



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Evaluation

Medical History

A detailed medical history and thorough physical examination are imperative in the evaluation and management of scrotal pain. When taking the medical history, health-care providers should query about the onset of symptoms (sudden vs. gradual), exact location of the

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Table 1. Differential Diagnosis of Acute Scrotal Pain			
 Testicular torsion Epididymitis Fournier gangrene Torsion of appendix testis Trauma or surgery Appendicitis Testicular cancer 	 Inguinal hernia Renal colic Henoch-Schönlein purpura Mumps orchitis Referred pain Varicocele Hematocele 		

pain, radiation, duration of pain (constant vs. intermittent), history of trauma or prior surgeries, and irritative urinary symptoms (frequency, urgency, dysuria, incomplete emptying of the bladder). The presence of abdominal pain or flank pain is also important when treating a patient with scrotal pain. Information on systemic symptoms such as fever, chills, nausea, vomiting, malaise, and weight loss should be elicited from the patient if they present. A focused past medical history must also be obtained to elicit a possible cause for scrotal pain, such as sexual activity, prolonged sitting, recent physical exertion, recurrent urinary tract infections, and recent instrumentation.

Examination

The clinician must perform a thorough genitourinary examination and examine the abdomen and flanks. The initial examination should begin with a general inspection of the groin and genitalia. If the patient is uncircumcised, external examination of the foreskin should be followed by reduction to completely expose the glans and allow visualization of any scars, ulcers, or other signs of inflammation. A small amount of whitish discharge under the foreskin can be normal. The urethral meatus should be gently opened to inspect for the presence of discharge. The scrotum must be inspected thoroughly, with the clinician taking note of any edema, erythema, induration, and abscesses. The scrotum should also be gently lifted to expose the posterior surface and the perineum to ensure that there are no signs of Fournier gangrene, such as crepitus, skin breakdown, or discoloration. Scrotal elevation during examination may alleviate some of the pain the patient is having (Prehn sign), indicating a pathology such as epididymitis that is less of an emergency, though this does not rule out testicular torsion. The most important aspect of examination is the testicles, because evaluation for testicular torsion must be at the forefront of the differential. The testis and epididymis must be palpated gently to evaluate the lie of each testicle (normal being longitudinal). Gentle palpation should not cause any discomfort if there is no pathologic process. The spermatic cord should be palpated, and any irregular nodules should be noted.¹ It is also important to assess the cremasteric reflex by gently stroking or pinching the upper thigh. The ipsilateral testis normally elevates with cremasteric contraction during a normal response. When testicular torsion is present, the reflex is often absent.² The clinician must evaluate for inguinal and femoral hernias, which may refer pain to the testis. If urinary symptoms are present with perineal or back pain, a rectal examination is warranted to evaluate for prostate enlargement, warmth, and tenderness. Examination for inguinal lymphadenopathy, suggestive of epididymitis or orchitis, and for costovertebral tenderness, a sign of pyelonephritis, is required. The most useful laboratory studies to obtain are urinalysis, urine culture, and gonorrhea and chlamydia studies. Color Doppler ultrasound (US) of the scrotum should be performed in any case where torsion is suspected, and a urologist should be consulted.

Testicular Torsion

Background

Testicular torsion is a twisting of the testicle along the longitudinal axis of the spermatic cord that can lead to ischemia of the testicle if treatment is delayed. Torsion is a urologic emergency. Although testicular torsion can occur in patients of any age, there is a bimodal peak in incidence, with most cases occurring in neonates and in adolescents around puberty. Torsion may be either intravaginal or extravaginal. Intravaginal torsion is due to a congenital anomaly called a bell clapper deformity, which allows the testicle to freely rotate within the tunica vaginalis. This occurs when there is a failure of the testicle to anchor posteriorly within the tunica vaginalis; it occurs more commonly in older children and adults. Extravaginal torsion occurs when there is inadequate fusion of the testicle to the scrotal wall, allowing rotation along the spermatic cord. This form presents in the postnatal period as painless testicular swelling. Both forms result in vascular congestion and decreased blood flow.

Presentation and Management

The classic presentation is sudden-onset, severe, unilateral scrotal pain. The pain is often associated with swelling, nausea, and vomiting. Many patients will report a recent history of trauma or significant strenuous activity. The classic physical examination findings include a high-riding testicle with a horizontal orientation and absence of the cremasteric reflex, though these are not definitive. The skin overlying the testicle may be warm, erythematous, and indurated. Intermittent torsion may result in recurrent painful episodes, with resolution between these episodes. Studies that should be obtained include a urinalysis and color Doppler US, with urologist consultation.³⁻⁵ Torsion of the testicle initially causes venous occlusion, and if it is persistent, it will ultimately lead to arterial occlusion, causing ischemia. Irreversible damage is thought to occur after 6 hours of ischemia. Findings on Doppler US may be normal in the early stages of torsion or in intermittent torsion. Initial changes seen on Doppler US are testicular enlargement and edema, which later give way to a heterogeneous and hyperechoic tissue appearance.⁶ A patient with a suspected testicular torsion should be transferred to the emergency department (ED) immediately for further evaluation and surgical consultation, because repair within 6 hours results in salvage rates approaching 100%. If the nearest ED is some distance away, manual detorsion may be attempted while preparing the patient for transfer; however, manual detorsion attempts should not delay transfer. Manual detorsion is achieved by twisting the affected testicle laterally. This is accomplished by outward rotation of the provider's hands as if opening a book, with an end point of subjective decrease in pain. US should be used to confirm return of blood flow. Surgical intervention is still necessary even if detorsion is successful.^{3–5}

Epididymitis and Orchitis

Background

Epididymitis and orchitis are common causes of acute scrotal pain that must be differentiated from testicular torsion. Epididymitis is more common than orchitis, which usually occurs because of a spread of the infection from the epididymis to the testes, which is considered epididymo-orchitis. In 2002, these two entities accounted for 1 in 144 visits in the outpatient setting in men between the ages of 18 and 50 years. Epididymitis occurs from retrograde ascent of pathogens, causing inflammation and infection. There are many causes of epididymitis, and these are usually differentiated on the basis of patient age. In this discussion, etiologies are limited to the most common causes.

In children younger than 13 years of age, the most common causes are postinfectious inflammatory reactions to entities such as enteroviruses, adenoviruses, and mumps. Sexually transmitted *Neisseria gonorrhoeae* or *Chlamydia trachomatis* are the most common causes in males 14 to 35 years of age. In men older than 35 years, infectious urinary pathogens such as *Escherichia coli* are the most likely cause of epididymitis; however, a detailed medical history, including information about sexual practices, must be obtained in this age group. Risk factors include sexual activity, prolonged sitting, recent instrumentation, and urinary tract abnormality. Immunocompromised patients and patients with human immunodeficiency virus are predisposed to fungal and viral etiologies. Other causes include medications such as amiodarone.

Presentation and Management

Patients usually present with gradual onset of pain that is isolated to the scrotum. Those with a more severe infection often present with scrotal swelling and pain as well as systemic symptoms such as fever, chills, and malaise. Severe infections are also more likely to be associated with irritative lower urinary tract symptoms like dysuria, frequency, urgency, and hematuria. The patient may present with nausea and vomiting, as in testicular torsion. Physical examination reveals a tender, swollen epididymis on palpation, mainly on the posterior scrotal aspect, and an intact cremasteric reflex. Tenderness isolated to the upper pole of the testis and relief of pain with scrotal elevation are both examination findings suggestive of epididymitis, though not diagnostic. Regional lymphadenopathy is also consistent with epididymitis. Costovertebral angle tenderness should be assessed to identify any associated pyelonephritis. Patients with severe systemic symptoms must be transferred to an ED for a more thorough evaluation. Urinalysis and urine culture should be obtained in all patients who present with symptoms that are concerning for epididymitis. Assays by polymerase chain reaction for N. gonorrhoeae and C. trachomatis are recommended for those patients considered at high risk for sexually transmitted infections (STIs). Cultures should be obtained of any discharge. Doppler US is often warranted to evaluate testicular blood flow, and it will reveal an enlarged, thickened epididymis with increased Doppler flow. Any suspicion of testicular torsion requires urology consultation.

Treatment should be directed at the most likely pathogen. Males between the ages of 14 and 35 years, as well as patients with a history of anal intercourse or in whom there is concern for STI, should be treated with a single dose of ceftriaxone (250 mg intramuscularly) and doxycycline (100 mg orally, twice daily) for 10 days. When coliform bacteria are suspected or the patient cannot take ceftriaxone or doxycycline, ofloxacin (300 mg orally, twice daily) or levofloxacin (750 mg orally, once

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Table 2. Acute Versus Chronic Bacterial Prostatitis: Presentations and Treatments					
Condition	Presentation	Inpatient Treatment	Outpatient Treatment		
Acute bacterial prostatitis	 Acute onset; patient usually appears ill Dysuria, urinary urgency, urinary obstruction Fever, chills, malaise 	 2-4 weeks' duration: Ciprofloxacin, 400 mg IV every 12 hours Levofloxacin, 750 mg daily Ampicillin, 1-2 g IV every 6 hours Piperacillin-tazobactam, 4.5 g IV every 6 hours 	 2-4 weeks' duration: Ciprofloxacin, 500 mg twice a day Levofloxacin, 750 mg daily 		
Chronic bacterial prostatitis	 Symptoms for ≥3 months Patient's appearance is nontoxic Dysuria, urgency, frequency 	• Typically not warranted	 4–6 weeks' duration: Ciprofloxacin, 500 mg twice a day Levofloxacin, 500 mg daily Trimethoprim-sulfamethoxazole, 160–800 mg twice a day 		
IV, intravenously.					

daily) for 10 days should be used. Often overlooked, symptomatic treatment should also be recommended: nonsteroidal anti-inflammatory medications, scrotal elevation, and ice packs.⁷ Close outpatient follow-up will be required. Admission is warranted for intractable pain, vomiting, abscess formation, outpatient treatment failure, and sepsis. Orchitis treatment requires bed rest and hot or cold packs with nonsteroidal anti-inflammatory medications. Antibiotics are not required for most causes of orchitis; resolution usually occurs within 3 to 10 days. If a bacterial source is suspected, antibiotics are needed.⁷

Prostatitis

Background

Prostatitis is a clinical syndrome caused by inflammation and swelling of the prostate, with the potential to have drastic impact on quality of life. Prostatitis is one of the most common urologic complaints in men younger than 50 years of age and affects up to 16% of American men over the course of their lifetime. Prostatitis is categorized into four distinct clinical syndromes: acute bacterial prostatitis (type I), chronic bacterial prostatitis (type II), chronic pelvic pain syndrome (type III), and asymptomatic inflammation (type IV). Type III is the most common form, making up approximately 90% of diagnosed cases. Acute bacterial prostatitis and chronic bacterial prostatitis occur in only a small proportion of cases. Type II accounts for approximately 5% to 10% of patients with prostatitis. Type I accounts for the least number of cases, with < 1% of patients having an acute infection; however, acute bacterial prostatitis has the potential for significant morbidity and mortality.8 Risk factors for bacterial prostatitis include urinary tract infections, urethral strictures, instrumentation of the urinary tract, benign prostatic hyperplasia, and urethritis from STIs. The most common bacteria associated with acute and chronic prostatitis are *E. coli*, *Klebsiella* species, *Proteus* species, and *Pseudomonas* species; however, a significant number of chronic bacterial infections are attributed to *C. trachomatis*, *Trichomonas vaginalis*, and *Ureaplasma urealyticum*. These latter organisms are predominantly sexually transmitted, primarily affecting those younger than 35 years.^{4,5,7} This review focuses on the evaluation of acute and chronic bacterial prostatic infections.

Presentation and Management

 Table 2 summarizes the presentations and treatments

 for acute bacterial versus chronic bacterial prostatitis.

Acute Bacterial Prostatitis

Acute bacterial prostatitis typically presents with irritative or obstructive urinary symptoms with pain. Patients who have true acute bacterial prostatitis usually appear ill. Systemic symptoms of fever, chills, malaise, nausea, and vomiting may be present. Physical examination should include a digital rectal examination and an abdominal examination. Gentle palpation of the prostate should be performed, which may reveal an enlarged, tender, and boggy prostate. Prostatic massage should not be performed, because this can cause bacteremia and sepsis. Diagnosis of acute bacterial prostatitis requires the presence of polymorphonuclear leukocytes and bacteria in the urine.

Treatment should be initiated at the time of evaluation, and treatment choice should be based on whether the

patient appears acutely toxic. Any patient who appears acutely ill should be referred to an ED for further evaluation and management, because acute prostatitis can lead to prostatic abscess and epididymitis. If the patient is acutely ill or toxic, "A patient with a suspected testicular torsion should be transferred to the emergency department immediately for further evaluation and surgical consultation, because repair within 6 hours results in salvage rates approaching 100%."

urology consultation is required, along with admission to an inpatient unit. Laboratory examination in these patients is required, including a complete blood count and a renal function panel. Concern for STI requires testing for likely agents. Initial empiric therapy for an acutely ill patient, if started prior to transfer to an ED, should be with ciprofloxacin (400 mg IV), levofloxacin (750 mg IV), ampicillin (1–2 g IV), or piperacillin-tazobactam (4.5 g IV). If bacterial resistance is suspected, a carbapenem such as ertapenem (1 g IV) or imipenem (500 mg IV) can be initiated if available. Patients who do not have a toxic appearance can be treated on an outpatient basis with oral antibiotics such as ciprofloxacin (500 mg twice a day) or levofloxacin (750 mg once daily). An alternate regimen includes trimethoprim-sulfamethoxazole double-strength (TMP-SMX DS), at 160 to 800 mg twice a day. Therapy for acute bacterial prostatitis should last 2 to 4 weeks.^{9,10}

Chronic Bacterial Prostatitis

Chronic bacterial prostatitis typically presents with irritative urinary symptoms such as urgency, frequency, dysuria, penile or perineal pain, and lower back pain. Chronic infection should be suspected in those who have recurrent urinary tract infections and grow the same strains of bacteria on multiple separate cultures. Symptoms of irritation must be present for at least 3 months. Between episodes of prostatitis in the chronic form, patients often have no symptoms. Physical examination should include an examination of the lower abdomen and the genitalia as well as a digital rectal examination. The prostate may be tender, boggy, or indurated. A detailed examination should be completed to exclude anatomic abnormality of the urinary tract. The gold standard for diagnosis of chronic prostatitis is the four-glass test, but this is rarely used and is labor intensive. The two-glass test, used more frequently, is performed by comparing specimens from before and after prostatic massage.

Treatment with antibiotics in patients suspected to have chronic prostatitis can typically be delayed until culture results with sensitivities are obtained. Fluoroquinolones are the preferred initial therapy, with either ciprofloxacin (500 mg twice a day) or levofloxacin (500–750 mg once daily) unless antibiotic resistance is suspected. Alternate regimens include TMP-SMX DS (1 tablet twice a day) or azithromycin (500 mg

once daily). If STI is suspected, patients should be treated with ceftriaxone (250 mg intramuscularly for 1 dose) followed by doxycycline (100 mg twice a day). The duration of therapy should be 4 to 6 weeks.^{9,10}

Chronic pelvic pain syndrome accounts for the majority of prostatitis, with patients experiencing long-term pelvic or perineal pain. Diagnosis is based on the amount of white blood cells found in prostatic secretions, semen, or urine after prostate massage.^{8–10}

Conclusion

Patients presenting with acute scrotal pain can present a significant challenge for clinicians in the outpatient setting. Obtaining a thorough medical history, performing a thorough but focused examination, and having a high clinical suspicion for certain diagnoses are imperative when evaluating scrotal pain. Any patient with a concerning medical history, disconcerting findings on physical examination, or a toxic appearance should be referred to an ED for further evaluation. When torsion is suspected or uncertain, urgent referral to an ED is indicated, with consultation with a urologist. Although conditions requiring urgent referral are relatively uncommon, clinicians will be far less likely to miss emergency conditions by maintaining a systematic, thorough approach and keeping emergency conditions in the differential diagnosis.

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Practice Management

Roundtable: Expert Perspectives on X-Ray Over-Read Strategies in Urgent Care

Urgent message: To ensure a high quality of patient care and reduce the risk of medical errors while also controlling administrative overhead, every urgent care center should have a clear policy and process for radiologist interpretation of x-ray images, image over-read, or both.

Introduction

A shealth-care costs continue to multiply, it is important to consider money-saving measures across the board. Radiography is an essential service in differentiating urgent care centers from primary care and other providers, and it enables rapid diagnosis of common presentations, from fractures to pneumonia. But when offering radiography as a service, urgent care operators should be strategic about when and how to read images in-house versus sending them out for interpretation by a third-party radiologist—which can take longer and add expense to the treatment process. Clinicians in urgent care must weigh several factors:

- Speed of service
- Patient satisfaction (from getting a correct diagnosis in a timely manner)
- Liability protection
- Cost

This roundtable discussion provides insights on questions considered by urgent care operators when choosing and using over-read radiology services.

Policy Basics

Ayers: What are the essential elements of a radiology over-read policy for urgent care?

Cohen: The policy should state its purpose. For example: "To ensure that the patient has quality care, all high-



risk x-rays will be over-read by a licensed radiologist." It should also spell out a time frame for over-reads and who will do them. The policy can specify categories for mandatory x-ray over-reads, such as pediatric, chest, cervical spine, skull, and facial bones.

Chou: The first most important element of a radiology over-read policy is to determine what films must be over-read (all films, discretion of the provider, patient

Moderator



Alan A. Ayers, MBA, MAcc, is Practice Management Editor of the *Journal of Urgent Care Medicine*, a member of the Board of Directors of the Urgent Care Association of America, and

Vice President of Strategic Initiatives for Practice Velocity, LLC.

Panelist Profiles



Victor Chou, MD, is Lead Physician at Lake After Hours Urgent Care in Denham Springs, Louisiana.



David Cohen, MD, is Medical Director for Teleradiology Specialists in Phoenix, Arizona.



Director for Norton Immediate Care Centers and Risk & Safety—Norton Medical Group.

Soraya Nasraty, MD, MMM, CPE, is Medical



Lee A. Resnick, MD, FAAFP, is Editor-in-Chief of the Journal of Urgent Care Medicine.

desire, etc.) and communicate this to the staff and patients so that there are no misunderstandings. The second most important element is to have a mechanism in place to ensure that all films sent for over-read are actually read, and that results are given to the provider to review (and possibly to the patient, depending on the clinic policy).

Nasraty: Agreed. The policy also should define when the x-rays will be over-read (turnaround) and how the provider or center will be notified when the radiologist notices a discrepancy with the preliminary reading by the provider.

Resnick: Some urgent care centers do not require over-reads for long-bone x-rays, whereas some leave it entirely up to the discretion of the provider. Those that demand over-reads for all films will want to set up clear expectations for the teleradiology partner regarding several parameters, including

- Timeliness of over-reads
- Policy for stat reads

- Reporting clinically significant and/or potentially life-threatening findings
- Process for sending and receiving reports
- Reporting discrepancies
- Regular quality-assurance (QA) and performanceimprovement programs

Which Films Get an Over-Read?

Ayers: What types of films are typically read by a consulting radiologist in urgent care?

Cohen: Most centers will send all or a majority of cases for interpretation. The percentage of centers sending all studies for over-read increased to 58% (from 51%) in 2015, according to the benchmarking data from the Urgent Care Association of America (UCAOA). The few that send only select cases often will send all chest and abdominal studies.

Nasraty: In our centers all our films are read by a consulting group. They consist of plain films such as chest x-rays, abdominal x-rays, and those of the bones, because we mainly see patients for mild illnesses and injuries.

Chou: I tend to over-read all chest x-rays as well as x-rays that can be complicated, such as cervical spine x-rays, or x-rays with hardware like pacemakers and orthopedic devices. Of course, each urgent care center or practitioner should have their own guidelines as to which films will need to be looked at by a radiologist. There is a financial question to consider as well.

Resnick: It is dependent on the requirements and risk tolerance of each owner or operator. Most of the large networks will choose to apply a more programmatic policy and procedure to mitigate risk. The reason for this is that large groups have less hands-on control over each provider, and they recognize that considerable variability in proficiency and training is the norm in urgent care. Smaller groups may feel more confident in the decision-making of their providers and therefore are more comfortable with less-stringent protocols.

Confirmation Versus Diagnosis

Ayers: What is the difference between reading for confirmation versus reading for diagnosis?

Nasraty: Confirmation is when they are confirming the preliminary read by the provider in the center. Reading for diagnosis would be when there are signs and presenting symptoms and the provider is wanting to get an idea of what is going on. Most of ours are confirmatory because we do not perform ultrasounds or computed tomography scans.

Cohen: The approach is the same for the radiologist. Our reports will always include descriptors and pertinent negatives because the reports will become a part of the patient's medical record.

Clinical Outcomes, the Patient Experience, and Liability

Ayers: How does an effective over-read policy impact clinical outcomes and the patient experience? What about professional liability?

Cohen: Accuracy should be a top priority for urgent care centers to consider in their over-read policy, not only for the safety of patients but also for the health of the clinic. An x-ray misdiagnosis can lead to a very serious or even life-threatening adverse outcome for the patient, which would result in exposure to medical liability. Additionally, with the widespread use of social media, even a minor misdiagnosis without an adverse patient outcome can have negative impact on the reputation of an urgent care center if the patient chooses to post unfavorable comments online.

Chou: It is vital for an urgent care to have access to over-reads. Urgent care providers are largely not radiologists by training, so it improves clinical outcomes to have a specialist who can review questionable findings. That can result in cost savings to the patient if something that is initially concerning to the urgent care provider ends up being read as benign or not fractured by the radiologist, saving the patient additional time and money.

Nasraty: I think if you have a good policy and turnaround, it not only helps you provide good-quality care efficiently but also makes for a great patient experience. Knowing quickly whether an injury has caused a fracture or a sprain makes a major difference in time lost from work and in quality of life.

Resnick: I agree. Over-reads mitigate much of the risk around x-ray interpretation for urgent care providers. When a nonradiologist reads an x-ray without over-read, they are going to be held to the standard of care of a radiologist reading the same film. So if the urgent care provider misses a Lisfranc injury, for example, that would have clearly been seen by a radiologist, then this failure to diagnose would likely fall below the standard of care. Likewise, a patient may follow up with a specialist who disagrees with your interpretation. Having a radiology over-read to back up your decision-making is very helpful.

Turnaround

Ayers: How important is rapid turnaround for x-ray reads?

Chou: X-rays reads should be turned around within 24 hours, even on weekends and holidays, and a mechanism should be in place for stat reads if needed. Patients expect prompt over-reads when they present to an urgent care. Current technology allows digital films and the ability to send x-rays to off-site radiologists, so in the year 2016 there really is no excuse for more than a day's turnaround time.

Cohen: Providing a rapid read when there is an emergency clinical situation is very important. It is becoming more standard in the indus-

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Insurance services provided through NFP Healthcare Industry Insurance Services, Inc., an affiliate of NFP Corp. (NFP). CA license #0763921. 173718 (PC-18863-15) try, with 28% of reads in 2015 being returned in an hour or less—up from 21% in 2014, according to the UCAOA benchmarking data. In the nonurgent setting, the more important factor is communication of positive findings or findings that are discrepant from the provider's impression at the time of the patient encounter.

Nasraty: This is absolutely key. For us it is 1 to 2 days during the week and 2 to 3 days on weekends, which could be improved upon, especially when there is a long weekend involved.

Resnick: Perhaps the most critical of needs for a typical urgent care provider is rapid turnaround. The reason for this is obvious, given the fact that the urgent care provider is determining a treatment and follow-up plan based initially on a wet read. [*Wet read* originated as a term used to mean a rush read done when handprocessed x-ray films were still drying after time spent in chemical film-developing tanks.] If the plan needs to change on the basis of a formal interpretation, then the sooner, the better.

Quality Assurance

Ayers: What quality-control measures should an urgent care operator expect from a consulting radiology group?

Cohen: Radiology groups must to perform peer-review QA in accordance with the recommendations of the American College of Radiology. We randomly select 2% of cases each day and submit them to the QA committee for review. The QA statistics are calculated weekly and monthly for each radiologist, and recurring QA issues are addressed. In addition, there should be a medical director or chief medical officer within the group who is actively involved in the QA program to review the results regularly. An urgent care operator should expect to have access to the QA data and have the opportunity to discuss any quality or accuracy concerns.

Nasraty: I agree that the radiology group should periodically review the x-rays in connection with injuries, to see whether a fracture or other abnormality was inadvertently missed. We sometimes ask for a reread, but to my knowledge, the group we work with does not give us its measures. It would be good to review chest x-rays in the same manner periodically.

Resnick: Monthly QA review is typical. And the minimum standard is to review all discrepancies between urgent care provider and radiologist. The radiology group's medical director should also do random image audits of a variety of films for each of the radiologists on staff.

Technological Integration

Ayers: How does technological integration affect the process?

Chou: A system that allows for taking digital images offers benefits. For an urgent care network with multiple locations, images can be sent between clinics to assist with patient follow-up. Also, providing images to the patient in the form of disks is easily done. Finally, digital systems allow for near instantaneous transfer of images to a radiologist if stat reads are needed.

Cohen: Technological integration for urgent care centers should be a very easy and straightforward process in most cases. Compression, encryption, and transmission of DICOM [Digital Imaging and Communications in Medicine] x-ray images is standard and can be quickly accomplished in most cases. Older virtual private network technology is no longer required, therefore saving cost and eliminating information technology maintenance requirements.

Nasraty: On the other side, radiologists should have access to the electronic health records so they can see what the patient presented with and what the examination showed. They also should have access to see what the assessment, plan, and discharge instructions were.

Resnick: Electronic medical record integration is a major contributor to the success of a teleradiology program. The integration ensures accurate reporting and timely review of results discrepancies. It also reduces unnecessary scanning and other manual work that creates inefficiencies in work flow.

Conclusion

The experts agree that every urgent care that provides radiography should have a policy for over-read. Practices vary: no outside radiologist used versus selective over-read of non-extremity and pediatric x-rays versus over-read of all x-rays. Over-read is typically for confirmation of the diagnosis made by the urgent care practitioner. An over-read policy that is overly broad, or over-read fees that are too high, can wipe out the center's profit on its radiography program, especially when providers rely heavily on stat reads for diagnosis, with the availability of that leading to increased use by providers. The key is to balance the objectives of providing high-quality medical care, controlling professional liability, and ensuring that radiography is economically feasible to offer in the center.

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Case Report

Ocular Arteriovenous Malformation Manifesting as Proptosis

Urgent message: Proptosis may be caused by a variety of vascular, infectious, endocrine, and neoplastic diseases that may threaten vision or cause serious systemic complications or death. Providers should be familiar with causes and work-up, including which findings suggest a need for immediate imaging and consultation.

ARMIN GOLLOGLY, MD, BRIAN ZIPSER, MD, WENDY HUANG, MD, FAAO, FAAP, CHRISTOPHER M. FECAROTTA, MD, FAAO, FAAP, FCPP, AND MARK RICHMAN, MD, MPH

Introduction

This report describes a case of unilateral proptosis due to an intraorbital arteriovenous malformation. Proptosis can be caused by a variety of vascular, infectious, endocrine, and neoplastic diseases that may threaten vision or cause serious systemic complications or death. Accurate diagnosis and timely and appropriate referral from the urgent care setting can prevent these complications. Thus, it is important for urgent care providers to understand the disease processes that can present with proptosis and include them in the differential diagnosis when evaluating eye problems.

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Case Presentation

A 32-year-old man presented to an urgent care clinic with a 5-year history of right-eye pain and gradual

swelling. There had been no inciting trauma, fever, or hyperthyroid symptoms. He had no blurry or double vision. There was no family history of ocular problems.

Physical Examination

On initial presentation, the patient's vital signs were as follows:

- Temperature: 36.5°C
- Blood pressure: 134/90 mm Hg
- Pulse: 83 beats/min
- Respiratory rate: 19 breaths/min
- Oxygen saturation: 99% on room air

On physical examination, the patient appeared to be well. He demonstrated right-eye injection, proptosis, and upper-lid swelling. His pupils were equally round and reactive to light; extraocular movements were intact. His dentition was unremarkable, and his sinuses were not tender. His visual acuity was 20/20 bilaterally without correction.

Imaging

The patient was referred for magnetic resonance imaging (MRI).

Diagnosis

The diagnosis was arteriovenous malformation (AVM), as seen in Figures 1–5, rather than carotid-cavernous fistula.

Discussion

Proptosis is an uncommon presentation or examination finding, with an incidence of 16 cases/100,000 persons per year among women and 2.9 cases/100,000 persons per year among men.¹ Proptosis can be subtle, and thus it may go unnoticed by the patient if it develops gradually. In the evaluation of eye presentations, especially with concerning features such as diplopia, vision loss, and restriction of extraocular movements, proptosis is an important physical examination finding that can help direct the work-up. Proptosis is easily missed, but looking for it can lead to timely imaging and treatment before the underlying disease irreversibly damages the patient's eyesight.

Anatomy

Blood flow to the eye is supplied by the internal carotid artery, which gives rise to the ophthalmic artery, which then branches into the central retinal artery and other smaller vessels. Venous drainage occurs through the central retinal vein and vortex veins; these drain into the cavernous sinus, the pterygoid venous plexus, and the facial vein.² AVMs occur when the embryonic vasculature does not differentiate in one or more locations, leading to a mass of tangled arteries and veins. The resulting high-pressure shunt between the arterial and venous systems causes congestion in the veins draining the AVM, leading to mass effect, tissue edema, and aneurysm formation.³ In both fistulas and malformations, blood bypasses the capillaries and







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Right orbital proptosis.

Figure 2.



Coronal computed tomography angiogram through the orbits shows asymmetrically enlarged right superior ophthalmic vein (*yellow*) compared with the nondilated left superior ophthalmic vein (*red*).



Enlarged, tortuous right cortical veins (*red*) and enlarged right basal vein of Rosenthal (*yellow*).

Figure 4.



Head magnetic resonance venogram coronal maximumintensity projection image showing enlarged, tortuous right cerebral veins.





Asymmetrically enlarged right external carotid artery branches: middle meningeal artery branches (anterior branch, *yellow arrow*; posterior branch, *red arrow*) and occipital artery (*green arrow*). The left middle meningeal artery branches are also enlarged, but less than on the right (*white arrow*s).

tissues: Arteriovenous fistulas involve a single connection between one artery and one vein, whereas AVMs involve multiple connections.⁴

Diagnosis and Disposition

When evaluating proptosis, clinicians must consider a broad differential diagnosis, ranging from benign to sight- and life-threatening conditions (**Table 1**). Patients

"Sudden onset of severe pain, nausea and vomiting, worsening proptosis, decreased visual acuity, and restriction of extraocular movements in the setting of a known or suspected AVM may represent orbital hemorrhage and retrobulbar hematoma. Bleeding within the confined space of the orbit leads to an orbital compartment syndrome and retinal ischemia, causing irreversible vision loss in as little as 60 to 100 minutes."

with unilateral proptosis should have same-day or urgent orbital imaging with intravenous contrast. If imaging suggests a vascular lesion, follow-up imaging should include contrast evaluation of cranial vasculature. Initial treatment of AVMs can be done medically, including symptomatic management of headache and control of hypertension and diabetes mellitus.⁵ Once identified, AVMs should be assessed in a neurosurgery department or a neuro-interventional radiology department for definitive surgical treatment.⁶

Treatment

Surgical options for the treatment of intraorbital AVM include microsurgical resection to remove the nidus of the AVM, endovascular embolization with thrombosing agents to reduce the size of the shunt, and stereotactic radiosurgery, which also reduces the shunt via radiation-induced thrombosis. Endovascular embolization is the preferred, least-invasive procedure, with a high cure rate and minimal risks. These three modalities may also be used in combination to maximize effect or reduce risk of hemorrhage; usually preoperative embolization is followed by surgical excision.⁷ Whichever treatment strategy is chosen, long-term follow-up is recommended to assess for regrowth of the lesion.

Complications

Major complications of intraorbital AVMs include intraorbital hemorrhage, headaches, eye pain, glaucoma, and visual disturbances such as decreased visual acuity (if cranial nerve II is affected) and diplopia (if cranial nerves III, IV, and/or VI are affected).⁶ The mortality rate for AVM-related hemorrhage is 6% to 14%, and the annual risk of bleeding for patients with an AVM is 1% to 2%.⁸

Sudden onset of severe pain, nausea and vomiting, worsening proptosis, decreased visual acuity, and restriction of extraocular movements in the setting of a known or suspected AVM may represent orbital hemorrhage and retrobulbar hematoma. Bleeding within the confined space of the orbit leads to an orbital compartment syndrome and retinal ischemia, causing irreversible vision loss in as little as 60 to 100 minutes.⁹ There are few reported cases detailing the treatment of acute spontaneous hemorrhage of AVMs; lateral canthotomy and cantholysis have been used in postoperative AVM bleeds.¹⁰ Decompression by lateral canthotomy should be considered when there is evidence of intraocular compartment syndrome,



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HOLDINGS

Table 1. Proptosis Differential Diagnosis and Evaluation						
Diagnosis	Pathophysiology	Presentation	Work-Up			
Endocrine/Oncology						
Graves ophthalmopathy11	Autoimmune process causing expansion of orbital soft tissues, seen in association with hyperthyroidism	Heat intolerance, unexplained weight loss, palpitations, sweating, exophthalmos, upper eyelid retraction	TSH, total T ₃ , free T ₄ , CT, MRI			
Horner syndrome ¹²	Interruption of sympathetic innervation to the eye and surrounding structures	Ptosis, meiosis, anhydrosis	CT/CTA, MRI/MRA, CXR			
IgG4-related orbital disease ^{13.14} Autoimmune lymphocytic infiltration by IgG4+ plasma cells		Painless eyelid swelling, proptosis	Biopsy and histology showing absolute IgG4+ cell count >10-100 cells/HPF or IgG4+/IgG+ ratio >0.4			
Leukemia/lymphoma ¹⁵	Lymphoid malignancy causing mass effect within the orbit as well as systemic symptoms	General weakness, bleeding, petechiae, ecchymosis	CBC, LDH, peripheral smear, bone marrow biopsy			
Meningioma, sphenoid wing ¹⁶	Tumor arising from the dural covering of the brain	Bulging temporal bone, anosmia, oculomotor palsy, altered mentation due to elevated intracranial pressure	CT, MRI			
Orbital neoplasm ¹⁷	Includes primary orbital tumors (melanoma, pleomorphic adenoma, adenoid cystic carcinoma, optic nerve glioma, schwannoma, neurofibroma) and metastatic tumors (most commonly breast, prostate, lung, and skin)	Mass effect within the orbit	CT, MRI, biopsy			
Pseudotumor (orbital inflammatory syndrome) ¹⁸	Idiopathic inflammation of orbital structures	Proptosis, restriction of extra-ocular movements, pain, erythema, chemosis	CT, MRI, MRI with DWI			
Sinus mucocele ^{19,20}	Cystic lesions originating in the sinuses due to blockage of sinus drainage, which may cause gradual expansion of the sinus and erosion of its bony walls.	Proptosis, diplopia, cranial nerve III palsy, vision loss, retro-orbital headache	CT, MRI			
Infectious						
Mucormycosis ²¹	Aggressive fungal infection occurring in immunocompromised patients	Fever, eschar of nares, black nasal discharge, facial pain/swelling, hyposmia, decreased vision	CT, MRI, biopsy of necrotic lesions			
Dacryoadenitis ²²	Inflammation of the lacrimal gland due to infectious, autoimmune, lymphoproliferative, or idiopathic causes	Pain, erythema, and edema in superior and lateral region of the orbit (lacrimal gland), may be acute or chronic	CT with contrast, smear and culture, biopsy			
Orbital cellulitis ¹⁸	Infection of tissue posterior to the orbital septum	Diplopia, pain with extraocular movements, proptosis, chemosis, fever, history of sinusitis	CT with contrast, MRI, blood cultures			

(continues)

as evidenced by a tonometric measurement of intraocular pressure >40 mm Hg.⁹

Take-Home Points

The patient presented in this case had slowly progressive unilateral proptosis without fever or clinical evidence of cancer, making infection or malignancy less likely. Normal findings on thyroid studies excluded Graves ophthalmopathy. Structural or vascular etiologies remained prominent on the differential diagnosis; a vascular etiology was confirmed by contrast-enhanced MRI. The patient was referred to a neuro-interventional radiology department for evaluation.

For ill-appearing patients with proptosis, indications for transfer to an emergency department include intraorbital hemorrhage, infection, and trauma. Rapid progression of symptoms, severe pain, and decreased vision may indicate intraorbital hemorrhage and retrobulbar hematoma, which should be managed by lateral canthotomy and by transfer to facilities with ophthalmology services. Patients for whom there is high suspicion for infection, including rapid progression, pain, fever, or risk factors for mucormycosis, may be transferred with intravenous antibiotics or antifungals.

In contrast, patients with slowly progressive proptosis not suggestive of infection or trauma can safely be discharged for semi-urgent imaging for vascular or structural abnormalities as long as close follow-up can be ensured. Ultimately, these clinically well patients may need referral to ophthalmology, neurosurgery, or neurointerventional radiology departments, depending on imaging results.

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Table 1. Proptosis Differential Diagnosis and Evaluation (continued)						
Diagnosis	Pathophysiology	Presentation	Work-Up			
Trauma						
Orbital fracture ²³	May occur at orbital floor, walls, or roof; often leads orbital swelling and entrapment of extraocular muscles/fat	Trauma, periocular swelling, diplopia, ecchymosis, chemosis, subconjunctival hemorrhage	CT, extra-ocular movement assessment, eye pressure, vision examination			
Vascular						
Anterior cranial fossa dural arteriovenous fistula ²⁴	Fistula through the dura, connecting branches of dural arteries to dural veins or a venous sinus	Proptosis, diplopia, cranial nerve palsies (due to mass effect from venous congestion in superior ophthalmic vein)	CTA, MRA, angiography, color Doppler			
Carotid-cavernous fistula ^{25,26}	Direct connection between carotid artery and cavernous sinus	Proptosis, chemosis, cephalic bruit, pain, elevated intra-ocular pressure/glaucoma, diplopia, vision loss, intracranial hemorrhage	CT, MRI, CTA, MRA, angiography, color Doppler			
Cavernous hemangioma ²⁷	Dilated cluster of veins forming a slow-growing tumor, leading to mass effect within the orbit	Proptosis, visual deficits, restriction of extra-ocular movements, papilledema	CT (often missed), MRI			
Cavernous sinus thrombosis ²⁸	Spread of infection from extra-cranial structures to the cavernous sinus through emissary veins. Local endothelial damage and bacteria-derived prothrombotic substances lead to thrombosis and venous congestion.	Proptosis, chemosis, periorbital edema, headache, sepsis	CT, MRI			
Cirsoid scalp aneurysm ²⁹	Arteriovenous fistula between superficial temporal artery and scalp veins causing venous congestion	Scalp swelling, bleeding, tinnitus, headache, bruit	CTA, angiography			
Intraorbital aneurysm ³⁰	Aneurysm of the intraorbital segment of the ophthalmic artery	Cranial nerve palsies, vision loss, hemorrhage, proptosis	CTA, MRI/MRA			
Intraorbital arteriovenous malformation ^{8,31}	Direct connection between intraorbital arteries and veins	Orbital bruit	CTA, MRI/MRA			
Orbital varices ¹⁹	Congenital venous malformation consisting of thin- walled and distensible veins. These veins have low flow and are prone to thrombosis.	Proptosis (usually intermittent and reversible), periorbital pain, acute vision loss	CT, MRI, color Doppler			
CT computed tomography CTA computed tomography angiography DW/ diffusion weighted imaging UDE high power field (g. imaging UDE high power field) (g. imaging UDE high power fiel						

CT, computed tomography; CTA, computed tomography angiography; DWI, diffusion-weighted imaging; HPF, high-power field; Ig, immunoglobulin; LDH, lactate dehydrogenase; MRA, magnetic resonance angiography; MRI, magnetic resonance imaging; T₃, triiodothyronine; T₄, thyroxine; TSH, thyroid-stimulating hormone.

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ABSTRACTS IN URGENT CARE

- Copeptin and Troponin Together Are Useful in Diagnosing Acute Coronary Syndromes
- Telemedicine Is Reliable for Assessing Illness Severity in Children
- Nonsteroidal Anti-inflammatory Drugs for Low Back Pain
- Low Socioeconomic Status Increases Risk of Methicillin-Resistant Staphylococcus aureus Infections

- Armadillos Have Carried Leprosy to the Southeastern United States
- Peripheral Blood Gene Expression Can Help Distinguish Viral from Bacterial Etiologies
- How to Get Physicians to Write Fewer Unnecessary Antibiotic Prescriptions
- Mindfulness Meditation Helps Decrease Back Pain

SEAN M. MCNEELEY, MD

ach month the Urgent Care College of Physicians (UCCOP) provides a handful of abstracts from or related to urgent care practices or practitioners. Sean M. McNeeley, MD, leads this effort.

Copeptin and Troponin Together Are Useful in Diagnosing Acute Coronary Syndromes

Key point: There is a new tool for ruling out myocardial infarction. Citation: Ricci F, Di Scala R, Massacesi C, et al. Ultra-sensitive copeptin and cardiac troponin in diagnosing non-ST-segment elevation acute coronary syndromes—the COPACS Study. *Am J Med.* 2016;129:105–114.

Concern about patients with non-ST-segment elevation myocardial infarction with chest pain and normal electrocardiogram (ECG) findings frequently causes a transfer to an emergency department (ED) or a prolonged ED stay. The authors in this noninferiority study compared troponin I serial testing with ultrasensitive copeptin and a single troponin I test in 196 consecutive patients presenting to an ED with nontraumatic chest pain and a nondiagnostic ECG findings. Levels of copeptin, also known as C-terminal pro-arginine-vasopressin, rise rapidly and then decrease. They concluded that the two-test method was



Sean M. McNeeley, MD, is an urgent care practitioner and Network Medical Director at University Hospitals of Cleveland, home of the first fellowship in urgent care medicine. Dr. McNeeley is a board member of UCAOA, UCCOP, and the Board of Certification in Urgent Care Medicine. He also sits on the *JUCM* editorial board. not inferior to serial testing. Although further study is needed, this new method does hold promise for urgent care.

Telemedicine Is Reliable for Assessing Illness Severity in Children

Key point: Telemedicine may be useful in assessing ill children. Citation: Siew L, Hsiao A, McCarthy P, et al. Reliability of telemedicine in the assessment of seriously ill children. *Pediatrics*. 2016;137:1–6.

Telemedicine is an expanding field, and not much is known about the reliability of assessment with the platform compared with that of hands-on visits. This study consisted of two parts: assessing children aged 2 to 36 months with fever, and assessing those aged 2 months to 18 years with respiratory complaints. The goal was to see whether evaluation by tablet with camera (iPad and FaceTime) and in person resulted in similar scores on two grading scales. Febrile children were assessed with the Yale Observation Scale. Children with respiratory symptoms were assessed with the Respiratory Observation Checklist. The authors found significant agreement between telemedicine assessments and in-person assessments. For the urgent care provider who uses telemedicine, these findings are more evidence that at least an assessment of illness severity in children using this method can be considered reliable. The findings do not address the diagnosis and treatment most common via these technologies, because most of these encounters are for low-acuity illness or injuries. Further study of telemedicine is definitely warranted.

Nonsteroidal Anti-inflammatory Drugs for Low Back Pain

Key point: Nonsteroidal anti-inflammatory drugs help a little for back pain.

Citation: Enthoven WT, Roelofs PD, Deyo RA, et al. Nonsteroidal anti-inflammatory drugs for chronic low back pain. *Cochrane Database Syst Rev.* 2016;2:CD012087. doi: 10.1002/ 14651858.CD012087.

This Cochrane review assessed the benefit of nonsteroidal antiinflammatory drugs (NSAIDs) as a group and as individual medications for low back pain. The study also looked at the effect of NSAIDs on disability scores. All individual drugs showed a similar slight benefit, but the level of evidence was low. Patients also showed minimally of decreased disability. Overall, the number of studies used was small (13), as was the number of participants. Considering the number of patients with back pain seen yearly (lifetime prevalence, 84%), the diversity of pain causes, and the variety of NSAIDs that can be given, it is difficult to draw strong conclusions from this review. In addition, the review also looked only at treatment of patients with chronic low back pain. For the urgent care provider, these findings are unlikely to cause changes in current practice. However, the review's limitations should be understood, because reports of this type frequently ignore limitations.

Low Socioeconomic Status Increases Risk of Methicillin-Resistant *Staphylococcus aureus* Infections

Key point: Community-associated transmission of methicillinresistant Staphylococcus aureus is a socioeconomic issue. Citation: Tosas Auguet O, Betley JR, Stabler RA, et al. Evidence for community transmission of community-associated but not health-care-associated methicillin-resistant *Staphylococcus aureus* strains linked to social and material deprivation: spatial analysis of cross-sectional data. *PLOS Med*. 2016;13:e1001944. doi: 10.1371/journal.pmed.1001944.

Authors in the United Kingdom looked at transmission of both community-acquired methicillin-resistant *Staphylococcus aureus* (ca-MRSA) infections and infections believed to be hospitalacquired (ha-MRSA). The authors speculated that ca-MRSA might have a higher burden on those in lower socioeconomic situations. As expected, they found almost no transmission of ha-MRSA in the community, but a reservoir does seem to remain in hospitals. The authors also found that there was a "Telemedicine is an expanding field, and not much is known about the reliability of assessment with the platform compared with that of hands-on visits. This study . . . found significant agreement between telemedicine assessments and in-person assessments. . . . These findings are more evidence that at least an assessment of illness severity in children using this method can be considered reliable."

high risk of ca-MRSA in areas with overcrowding, homelessness, low income, and recent immigration to the United Kingdom. Infection and colonization appeared to be related to area of residence and overcrowding. It is likely that these factors are applicable to the United States as well as the United Kingdom, and therefore U.S. urgent care providers should consider them with regard to diagnosis and prevention of recurrence. Although socioeconomic status and overcrowding are not problems an urgent care provider can fix, helping patients understand how transmission occurs and helping them to prevent it should be part of treatment.

Armadillos Have Carried Leprosy to the Southeastern United States

Key point: Leprosy is spreading via armadillos. Citation: Sharma R, Singh P, Loughry WJ, et al. Zoonotic leprosy in the southeastern United States. *Emerg Infect Dis*. 2015;21:2127–2134.

Unfortunately there is bad news on the infectious-disease front: Leprosy is now present in the southeastern United States. According to the authors, nine-banded armadillos (*Dasypus novemcinctus*) naturally carry *Mycobacterium leprae* and have been blamed in zoonotic transmission of leprosy. Although it is rare in the United States (fewer than 200 cases per year, mostly from outside sources), almost 500,000 cases have been reported in the Western hemisphere since about 2005. In about one-third of leprosy cases, there was no exposure outside the United States. Leprosy is a chronic bacterial disorder that affects nerves, skin, and other tissues. It is still a clinical diagnosis and requires more than 2 years of medication to cure. Leprosy is thought to be transmitted between patients by direct contact



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or infectious aerosols. However, more than 95% of individuals are genetically not susceptible to it. Previous reports found the disease in armadillos in Texas and Louisiana but not in other states. However, these authors found evidence of disease in the southeastern United States as well. This is one more disease that urgent care providers should keep in mind when patients present with unusual symptoms.

Peripheral Blood Gene Expression Can Help Distinguish Viral from Bacterial Etiologies

Key point: New diagnostic tools provide hope for differentiating viral and bacterial causes.

Citation: Tsalik EL, Henao R, Nichols M, et al. Host gene expression classifiers diagnose acute respiratory illness etiology. *Sci Transl Med.* 2016;8:322ra11.

The difficulty of differentiating bacterial from viral etiologies in acute upper respiratory illness is part of the reason that significant amounts of antibiotics are prescribed. One of the many reasons for this is that viral and bacterial illnesses can co-occur. This study used peripheral blood gene expression to determine whether viral, bacterial, or noninfectious causes were present. The authors said that the study is the first of its kind using a large emergency department patient population (273 participants). This more consistent population would have patients representing all three causes, without the healthy patients used as comparison groups in previous studies. The researchers' findings showed promise for peripheral blood gene expression compared with procalcitonin. This diagnostic tool is not yet available for use by urgent care providers, but findings about its efficacy provide hope for future ability to help determine the cause of upper respiratory illnesses.

How to Get Physicians to Write Fewer Unnecessary Antibiotic Prescriptions

Key point: Some interventions do reduce the amount of unnecessary antibiotic prescriptions.

Citation: Meeker D, Linder JA, Fox CR, et al. Effect of behavioral interventions on inappropriate antibiotic prescribing among primary care practices: a randomized clinical trial. *JAMA*. 2016;315:562–570.

Despite significant effort in health care to change minds, physicians still frequently prescribe antibiotics for illnesses that are not affected by antibiotics. This study looked at 49 primarycare providers' prescribing habits for nonspecific upper respiratory infections, bronchitis, and influenza. The authors then provided three interventions: suggestion of alternative medications by the electronic medical record (EMR), accountable justification, and peer comparison. Accountable justification requested reasons for prescribing antibiotics for these diag"Treating chronic low back pain in older adults is difficult. Narcotics and nonsteroidal anti-inflammatory drugs all cause significant problems that occur more frequently in older patients.... Mindfulness training is one more tool that the urgent care provider can use to guide the motivated patient to pain reduction."

noses. Peer comparison entailed emails with rankings of providers by number of "inappropriate" prescriptions written. For those latter two interventions, prescription rates decreased from 5% to 7% more than for control participants. The providers did not seem to change their diagnosis pattern in order to justify antibiotics, such as recording a diagnosis of sinusitis or pneumonia instead of a diagnosis of sore throat or bronchitis. There was a significant increase in return visits, from 0.43% to 1.41%. Accountable justification and peer comparison did seem to be the cause of the change. Urgent care medical directors can use those two methods to help move providers toward compliance with current guidelines.

Mindfulness Meditation Helps Decrease Back Pain

Key point: Mindful meditation is a treatment option for low back pain.

Citation: Morone NE, Greco CM, Moore CG, et al. A mindbody program for older adults with chronic low back pain: a randomized clinical trial. *JAMA Intern Med*. 2016 February 22. doi: 10.1001/jamainternmed.2015.8033. [Epub ahead of print.]

Treating chronic low back pain in older adults is difficult. Narcotics and nonsteroidal anti-inflammatory drugs all cause significant problems that occur more frequently in older patients. The researchers in this single-blind, randomized clinical trial attempted to determine whether mindful meditation decreased pain and improved function in patients older than 65 years compared with individuals without pain. There were 140 individuals in the pain group and 142 in the pain-free group. The participants received 6 weeks of training and 6 monthly sessions. The intervention was modeled on the Mindfulness-Based Stress Reduction program; the control program was modeled on "10 Keys" to Healthy Aging. There was short-term improvement in function and sustained pain reduction. Mindfulness training is one more tool that the urgent care provider can use to guide the motivated patient to pain reduction.

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Protecting Your Urgent Care Center Against Whistle-Blowers

Damaris Medina, Esq., and Chloe Ghoogassian, Esq.

Urgent message: Government financial enticements for whistleblowing have resulted in a sharp rise in employee reports against their health-care employers. Urgent care centers can protect themselves by identifying potentially litigious employees, having a wellpublicized compliance program, and by establishing internal reporting procedures.

Introduction

In recent years, there has been a dramatic rise in the number of whistle-blower lawsuits in the health-care industry. Because these lawsuits reap huge payouts for the federal government, whistle-blowers are monetarily enticed to report their employers to government agencies rather than fix noncompliance issues within their organizations. This trend has reared its head in the urgent care industry. As a result, it is imperative that urgent care centers understand what they can do to protect themselves.

Whistle-Blowing Lawsuits on the Rise for Foreseeable Future

Whistle-blowing lawsuits have become a significant revenuegenerating stream for the U.S. government. Since the Fraud Enforcement and Recovery Act amended the False Claims Act (FCA) in 2009, the government has collected nearly \$23 billion under the act, with nearly 4000 new FCA matters initiated. Of those monies collected since 2010, \$16.5 billion can be attributed to health care. Before 2010, there was only 1 year in the history of the FCA when more than 700 new FCA qui tam matters were filed. [*Qui tam* is an abbreviation of a Latin phrase used to refer



Damaris Medina is a health-care attorney in the Los Angeles-based law firm of Michelman & Robinson, LLP, with experience in defense against government investigations and audits. She is also a member of the board of directors of the Urgent Care Association of America. **Chloe Ghoogassian** is an associate with Michelman & Robinson, focusing on business litigation. Both represent providers and urgent care facilities across the United States. to legal action by a private citizen regarding potential violations of government laws.] However, every year since 2010 has seen more than 700 new FCA suits—with 804 new matters docketed in 2014 alone, and with an unprecedented \$5.7 billion in healthcare fraud-related recoveries. The flood of FCA activity is therefore not expected to abate anytime soon.

There are a myriad of ways that whistle-blowers can report fraudulent conduct to the government; in addition to reporting under the FCA, whistle-blowers can file under the Internal Revenue Service's Whistleblower Office, or through the U.S. Securities and Exchange Commission's Office of the Whistleblower, which came out of the Dodd-Frank Act. Under that act, whistleblowers, or qui tam relators, as they are frequently called, are provided incentives by the government and have proven to be effective tools in battling health-care fraud.

In 85% of cases, relators are current or former employees of the defendants, including former executives. Under the FCA, whistle-blowers receive between 15% and 30% of the monies the government recovers when these civil fraud cases are resolved by settlement or trial. The FCA is a powerful weapon against fraud, generating more than \$15 in recoveries to taxpayers for every \$1 spent on health-care fraud investigations. As the federal government's recoveries have soared in recent years, so too have relators' bounties. In 2014, relators raked in \$435 million—their secondmost lucrative year ever. Hence, it is not surprising that the government, prospective whistle-blowers, and their attorneys are eager to expose any perceived mishap by health-care providers.

Urgent Care Is a Prominent Target

In 2012, the U.S. Department of Justice reached a settlement with a well-known urgent care organization to resolve charges that it had submitted fraudulent claims to Medicaid, Medicare, and other federal and state programs over the course of many years. The lawsuit alleged that the urgent care organization had been submitting claims for thousands of medically unnecessary tests and procedures, primarily unnecessary allergy testing, H1N1 virus testing, and respiratory panel testing. Two whistleblowers shared an award of approximately \$1.6 million.

HEALTH LAW AND COMPLIANCE

In January 2015, a settlement was announced in a matter involving defendants who operated urgent care facilities in Charleston, South Carolina. In that case, relators asserted that the defendants violated the FCA and Anti-Kickback Statute by engaging in fraudulent billing procedures for claims that were submitted to Medicare, Medicaid, and TRICARE. It was alleged that defendants had provided illegal bonus incentives to physicians. The plaintiffs also contended that the facilities had fraudulently billed for ancillary services, including computed tomography scans and x-rays. Further, many of the billed services were in some cases not performed at all, or were allegedly performed by unlicensed technologists.

How Can You Avoid Lawsuits Related to Whistle-Blowing?

One of the ways in which whistle-blowing claims can be avoided is by conducting background checks on job candidates to determine whether they have sued or initiated any qui tam suits against their former employers. Checks can be run through county, state, and federal court systems. Even search engines can be employed to determine new hires' history of whistleblowing. As a result, entities can make informed hiring decisions that lessen the likelihood of whistle-blowing claims.

Second, compliance programs reduce the risk of violating applicable laws, rules, and regulations and may allow urgent care centers to benefit from minimized impact of civil, criminal, and administrative enforcement efforts. Additionally, compliance programs create a culture of compliance that lessens the likelihood of retaliation against whistle-blowers by individuals within a company. Employees are encouraged to report any compliance risks to a compliance officer or committee, which affords employees with the opportunity to report any issues and urgent care centers with the responsibility of investigating and addressing any reported compliance concerns without retaliating against employees for reporting any perceived unlawful activity.

Further, effective compliance programs are well-publicized, user-friendly, internal reporting systems that include written policies, procedures, and standards of conduct. As discussed in the federal sentencing guidelines, effective compliance programs are generally considered to have at least seven components:

- 1. Standards and procedures
- 2. Oversight
- 3. Education and training
- 4. Auditing and monitoring
- 5. Reporting
- 6. Enforcement and discipline
- 7. Response and prevention

Such systems encourage compliance and stress the importance of reporting complaints so that employees become inclined to raise concerns informally within the company's management "Compliance programs reduce the risk of violating applicable laws, rules, and regulations and may allow urgent care centers to benefit from minimized impact of civil, criminal, and administrative enforcement efforts."

structure, rather than resort to whistle-blowing to external agencies.

Best Practices for Dealing with a Complaint

- Conduct an initial investigation: First, after becoming aware of a whistle-blower complaint, the company must quickly and thoroughly analyze the underlying facts and circumstances. Determinations regarding the scope of the investigation and the proper party to conduct the inquiry must be made early on, including how serious a complaint appears, plausibility of the events described, the complainant's background, and the potential legal and financial ramifications if the allegations are ultimately proven to be true. Consider consulting outside counsel if the allegations involved are more serious, there is a government program at risk, there is greater confidentiality needed for the results, senior management is involved as the bad actors, or if the whistle-blower has obtained counsel or filed an administrative complaint.
- Deal with the documents: Second, the company should collect and review relevant documents and interview witnesses, beginning its fact-finding efforts as quickly as possible. Taking document preservation seriously and moving quickly and proactively show the whistle-blower and other interested parties that the complaint is being taken seriously and prevent potential charges of obstruction of justice.
- Prevent retaliation: Last, urgent care centers should keep the following tips in mind:
 - Use outside neutral consultants.
 - Document the investigation closely.
 - Keep the whistle-blower engaged in the investigation.
 - Report conclusions of the investigation.

These steps help to avoid retaliation allegations from the whistle-blower or potential whistle-blowers.

Although the tide of whistle-blower litigation in the healthcare industry is unlikely to be stemmed anytime soon, steps can be taken to decrease your urgent care center's likelihood of becoming a target. Educate yourself on the kinds of issues that could lead to complaints, and take steps to ensure that your center maintains compliance with legislation. A little preventive medicine will go a long way toward ensuring the financial and reputational health of your urgent care center.



CLINICAL CHALLENGE: CASE 1

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

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

Shoulder Pain in a 62-Year-Old After a Fall



Case

A 62-year-old man presents with right shoulder pain that began the previous evening after he fell in his garage. The pain is worse with movement through the range of motion. He has no pain in the elbow and says that he has no head pain or head injury. His social history reveals that he is a smoker and drinks alcohol.

View the image taken (Figure 1) and consider what your diagnosis would be.

Resolution of the case is described on the next page.

THE RESOLUTION



Differential Diagnoses

- Pathologic fracture
- Clavicle fracture
- Shoulder dislocation
- Pneumothorax
- Pulmonary contusion

Physical Examination

On physical examination, the patient is afebrile and to have a pulse of 132 beats/min, a respiration rate of 24 breaths/min, and a blood pressure of 162/96 mm Hg. He is alert and oriented. He winces whenever he moves his right shoulder. Both lungs are clear on auscultation. His heart rate and rhythm are regular, without murmur, rub, or gallop. His abdomen is soft and nontender, without rigidity, rebound, or guarding.

His right shoulder has an abrasion on the lateral aspect, and he experiences generalized pain on palpation. However, he has no pain at the distal clavicle or scapula. There is not an empty sulcus sign. He does not have elbow pain on palpation. His neurovascular status is intact, with a 2+ right radial pulse.

Diagnosis

A humerus x-ray (**Figure 2**) is ordered. Image findings indicate a diagnosis of proximal humerus fracture.

Learnings

Proximal humerus fractures occur frequently, accounting for 5.7% of all fractures in adults. These fractures occur more commonly in women (70%) and the elderly, with the average age in the latter group being 64.8 years, because this is typically an osteoporotic fracture. About half of the fractures are displaced, and most are at the surgical neck.

What to Look For

Factors from the medical history to consider include the mechanism and reason for the fall. Inquire about pain in the elbow, wrist, hand, and neck. Differentiate the reason for the injury: syncope or mechanical fall. Consider seizure as a cause.

These history points are suggestive of syncope:

- Preceding nausea or diaphoresis
- Oriented on waking (supine)
- Age >45 years
- Prolonged sitting or standing before the fall
- Congestive heart failure or coronary artery disease

These are suggestive of seizure:

- A history of seizures
- Tongue biting
- Postictal state
- Age <45 years</p>
- Preceding aura
- Observed seizure activity—not myoclonic activity

Important elements of the physical examination include assessing for neurovascular compromise, determining the location and exacerbation of pain, and inquiring as to tetanus status if there is an associated laceration. As with all fractures, examination of the distal joint and proximal structures and documentation of neurovascular status are important. With a proximal humerus fracture, the axillary nerve is the nerve most commonly injured. Its function may be assessed by checking sensation over the deltoid muscle.

Imaging generally involves an x-ray, which should demonstrate a fracture. It is important to exclude a dislocation, associated pneumothorax, pathologic fracture, and multiple rib fractures, which may indicate a more serious injury.

Management even for significantly displaced fractures is nonsurgical, with an arm sling and pain control. Orthopedic or primary-care follow-up in 3 to 4 days is recommended.

Transfer to an emergency department should be done immediately with the following:

- Open fractures
- A concerning mechanism of injury such as major trauma from a motor vehicle collision
- Consideration of elder abuse
- Associated pneumothorax
- Unstable vital signs

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INSIGHTS IN IMAGES CLINICAL CHALLENGE: CASE 2

Shoulder Pain in a 42-Year-Old After an Attempt to Stop a Fall



Case

A 42-year-old woman presents with pain in her right shoulder that suddenly began after she caught herself with her raised right arm as she fell. She reports that she had been standing on a step stool and reaching for an object, and then fell forward. She has severe pain in the right shoulder, and it worsens with movement even through a minimal range of motion. She has associated numbness over the lateral portion of her upper arm. She does not have fever, vomiting, chest pain, shortness of breath, abdominal pain, any head injury, or head or neck pain.

View the image taken (Figure 1) and consider what your diagnosis would be.

Resolution of the case is described on the next page.

THE RESOLUTION



Differential Diagnoses

- Posterior shoulder dislocation
- Pathologic fracture
- Scapular fracture
- Acromioclavicular joint separation
- Inferior shoulder dislocation

Physical Examination

The patient's medical history reveals no previous illnesses. She is a smoker and occasionally drinks alcohol. On physical examination, the patient is found to be afebrile and to have a pulse of 112 beats/min, a respiration rate of 24 breaths/min, and a blood pressure of 138/92 mm Hg. She is alert and oriented, is in no acute distress, and is breathing comfortably but slightly faster than normal. Both her lungs are clear on auscultation. Her heart rate and rhythm are regular, and she has no murmur, rub, or gallop. Her abdomen is soft and nontender, without rigidity, rebound, or guarding.

Her right shoulder appears distorted, with a slight divot where the humeral head is normally palpated, resulting in a squared-off appearance. Sensation is intact in the distribution of her axillary nerve. Her radial pulse is 2+. She reports no pain in her right shoulder or clavicle on palpation.

Diagnosis

A chest x-ray is ordered, and it confirms (**Figure 2**) that an anterior shoulder dislocation with a Hill-Sachs lesion is the correct diagnosis. Note the shoulder dislocation, with the humeral head displaced from the glenoid fossa, and the deformity from a compression fracture of the humeral head (Hill-Sachs lesion).

Learnings

The shoulder joint is the most commonly dislocated joint, most often anteriorly. Other types of shoulder dislocation include posterior and inferior (luxation erecta). A typical mechanism of injury for an anterior dislocation includes stress on a externally rotated and abducted shoulder.

A posterior dislocation may occur when there is an acute force directed toward the anterior shoulder (proximal humerus) and pushing the head of the humerus posteriorly. Other mechanisms of posterior dislocation include falls, electric shock, and a seizure. Approximately 90% of shoulder dislocations are traumatic, with recurrence rates of up to 90% in athletes and in patients younger than 20 years of age.

What to Look For

If the mechanism was from a fall, there may be other injuries. Inquire about pain in the elbow, wrist, hand, head, and neck. Differentiate a mechanical fall from a syncopal episode or a seizure, which may result in a posterior dislocation or bilateral posterior dislocations. If there was an altercation, inquire about other injuries, any police report, and the possibility of physical abuse. Assess for neurovascular compromise by asking about numbness or disproportionate pain. Localize the area of greatest pain. Inquire about what makes the pain worse, such as movement, breathing, or palpation.

First inspect the shoulder for the presence of a visible deformity and compare it with the other shoulder. Assess the integrity of the skin and look for swelling. The humeral head can often be palpated anteriorly (below the coronoid process). Evaluate range of motion and neurovascular status.

Assessing the position of the arm may provide clues to the type of dislocation:

- Anterior dislocation—abduction and external rotation
- Posterior dislocation—adduction and internal rotation
- Inferior dislocation—abduction with flexed elbow and hand on or behind the head (the patient will appear to be in severe pain). Note that it may be possible to palpate the humeral head on the lateral chest wall.

Most patients will require transfer to an emergency department for a definitive diagnosis. Transportation may be done by private automobile for patients who are hemodynamically stable, are not in respiratory distress, and have a good social support network. Experienced health-care providers can reduce the shoulder in the urgent care setting before transfer.



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CODING Q&A

Prolonged-Service Codes

DAVID E. STERN, MD, CPC

Q. The coding staff has relayed to me that we can now bill for times when my clinical staff must spend extra time with a patient. Is this true? What are the requirements for documentation?

Yes, two new Current Procedural Terminology (CPT) codes • added in 2016 by the American Medical Association allow you to bill for clinical staff members' time spent with a patient above and beyond what is considered to be the usual amount of time. CPT codes 99415, "prolonged clinical staff service (the service beyond the typical service time) during an evaluation and management service in the office or outpatient setting, direct patient contact with physician supervision; first hour (list separately in addition to code for outpatient evaluation and management service)," and **99416**, "prolonged clinical staff service (the service beyond the typical service time) during an evaluation and management service in the office or outpatient setting, direct patient contact with physician supervision; each additional 30 minutes (list separately in addition to code for prolonged services)," are add-on codes to be used in conjunction with evaluation and management (E/M) codes **99201** through **99215**. These codes may be reported for no more than two simultaneous patients, and the physician or other qualified health-care professional must be in the clinic and immediately available to provide direct supervision of the clinical staff.

These codes cannot be used in conjunction with the prolonged-service CPT codes **99354**, "prolonged evaluation and management or psychotherapy service(s) (beyond the typical service time of the primary procedure) in the office or other outpatient setting requiring direct patient contact beyond the usual service; first hour (list separately in addition to code for office or other outpatient evaluation and management or psychotherapy service)," or **99355**, "prolonged evaluation and management or psychotherapy service(s) (beyond the typical



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service time of the primary procedure) in the office or other outpatient setting requiring direct patient contact beyond the usual service; each additional 30 minutes (list separately in addition to code for prolonged service)." These prolongedservice codes are reserved for the physician or other qualified health-care professional.

Clinical staff must document the face-to-face time spent with the patient in order to bill the codes. The time does not have to be continuous, and time spent performing separately reported services other than the E/M service is not counted toward the prolonged-service time. **Table 1** illustrates the correct reporting of prolonged services provided by clinical staff

Table 1. Total Duration of Prolonged Services			
Duration (min)	Codes		
<45	Not separately reported		
45-74	99415		
75-104	99415, 99416		
105-134	99415, 99416 X 2		

CODING Q&A

Table 2. Effects of Add-On Code 99415 on E/M Codes					
E/	M Code	Add-On Code 99415			
Code	Time (min)	Total Staff Time (min)	Code	Total Staff Time (min)	Code
99201	10	<55	NSR	55-84	99415
99202	20	<65	NSR	65-94	99415
99203	30	<75	NSR	75-104	99415
99204	45	<90	NSR	90–119	99415
99205	60	<105	NSR	105-134	99415
99212	10	<55	NSR	55-84	99415
99213	15	<60	NSR	60-89	99415
99214	25	<70	NSR	75-99	99415
99215	40	<85	NSR	85-114	99415
E (M. avaluation and management: NSD, not constately reported					

E/M, evaluation and management; NSR, not separately reported.

members with physician supervision in the office setting beyond the initial 45 minutes.

Table 2 will help you better understand how the times already discussed here work in conjunction with office-visit E/M codes. The table shows typical times as listed by CPT for each E/M service and how they affect reaching the threshold for CPT code **99415**.

It is advised, but not required, that start and stop times be used when clinical staff members spend face-to-face time with the patient. Noting actual time spent with the patient, along with the progress of the patient during those times, leaves no doubt about the calculation of time, should a recordauditing situation arise.

We had an instance in which after having a minor laceration repair done, a patient was not feeling well, so we kept her in one of our examination rooms to lie down. My staff members looked in on her a couple of times, and after about an hour, she felt better and was released. Can we bill for the time the patient spent in the examination room and for the time my staff members looked in on her? As already noted, new CPT add-on codes **99415** and **99416** are for use when clinical staff members spend a prolonged amount of time face-to-face with a patient. From your explanation, it appears that you would want to make sure that the documentation supports *face-to-face* time with the patient. Just looking in on the patient for a minute or two every once in a while is unlikely to meet the time requirements for these codes.

Keep in mind that these codes must be used in conjunction with E/M codes **99201** through **99215**. Be sure to follow the time requirements outlined here in the preceding question. In addition, time spent with the patient in preparation for the procedure and performing the procedure will not count toward calculating the correct code. As noted in the previous answer, in order to use these codes, the minimum staff time spent with the patient beyond any time spent on the procedure is 55 minutes (with a code of **99201** or **99212**). However, the minimum staff time for codes **99203** and **99214** is 90 minutes and 70 minutes, respectively.

"It is advised, but not required, that start and stop times be used when clinical staff members spend face-to-face time with the patient. Noting actual time spent with the patient, along with the progress of the patient during those times, leaves no doubt about the calculation of time, should a record-auditing situation arise."

Will Medicare or other payors pay for the new prolonged-service CPT add-on codes 99415 and 99416 for clinical staff?

A. If you visit the CPT page of the website of the Centers for Medicare & Medicaid Services website, at https://www.cms.gov/apps/physician-fee-schedule/search/ search-criteria.aspx, you will find that these codes are indeed included on the Medicare physician fee schedule. The range of payment varies by jurisdiction, but reimbursements are in the general range of U.S.\$8.00 to U.S.\$12.00 for CPT code **99415** and U.S.\$4.00 to U.S.\$6.00 for CPT code **99416**. For other payors, you will need to speak with them directly to obtain their reimbursement rates.

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DEVELOPING DATA

ast month, in our March 2016 issue, we reported data for 2014 on the top 20 medications prescribed in U.S. urgent care centers. This month, we bring you percentages for the next 20 most-prescribed medications (items 21–40).

The data were obtained as part of the 2014 Urgent Care Chart Survey of 150 million annual visits by patients to more than 800 different urgent care clinics. The survey was conducted by the *Journal of Urgent Care Medicine*.

The survey's methodology and data abstraction forms were initially designed in 2008 by researcher Robin M. Weinick, PhD, then an assistant professor at Harvard Medical School and a senior scientist at the Institute for Health Policy at Massachusetts General Hospital, and now associate director of RAND Health.

MEDICATIONS 21 THROUGH 40 BY PERCENTAGE OF PRESCRIPTIONS WRITTEN (BRANDS AND GENERICS TOGETHER)

	Drug Name	Generic Name	Percent of Visits at Which Medication Was Prescribed	Total Projected Prescriptions
21	Tamiflu	Oseltamivir	1.68%	2,521,568
22	Albuterol	Albuterol	1.66%	2,495,416
23	AZO	Phenazopyridine	1.55%	2,329,646
24	Diflucan	Fluconazole	1.48%	2,217,023
25	Phenergan DM	Promethazine DM	1.17%	1,758,686
26	Bactroban	Mupirocin	1.15%	1,725,364
27	Phenergan-Codeine	Promethazine-codeine	1.08%	1,624,720
28	Cleocin HCl	Clindamycin HCl	1.07%	1,604,980
29	Vibramycin	Doxycycline hyclate	0.94%	1,404,536
30	Zyrtec	Cetirizine	0.93%	1,389,520
31	Tussionex	Chlorpheniramine-hydrocodone	0.90%	1,349,364
32	Macrobid	Nitrofurantoin monohydrate/macrocrystals	0.87%	1,299,928
33	Bromfed DM	Brompheniramine-pseudoephedrine DM	0.85%	1,268,799
34	Hycodan	Hydrocodone-homatropine	0.82%	1,230,245
35	Claritin	Loratadine	0.79%	1,182,834
36	Percocet	Oxycodone-acetaminophen	0.76%	1,143,859
37	Ceftin	Cefuroxime axetil	0.76%	1,137,110
38	Azmacort	Triamcinolone acetonide	0.73%	1,101,931
39	Prelone	Prednisolone	0.70%	1,047,349
40	Nasonex	Mometasone	0.65%	971,002



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