JUCM™
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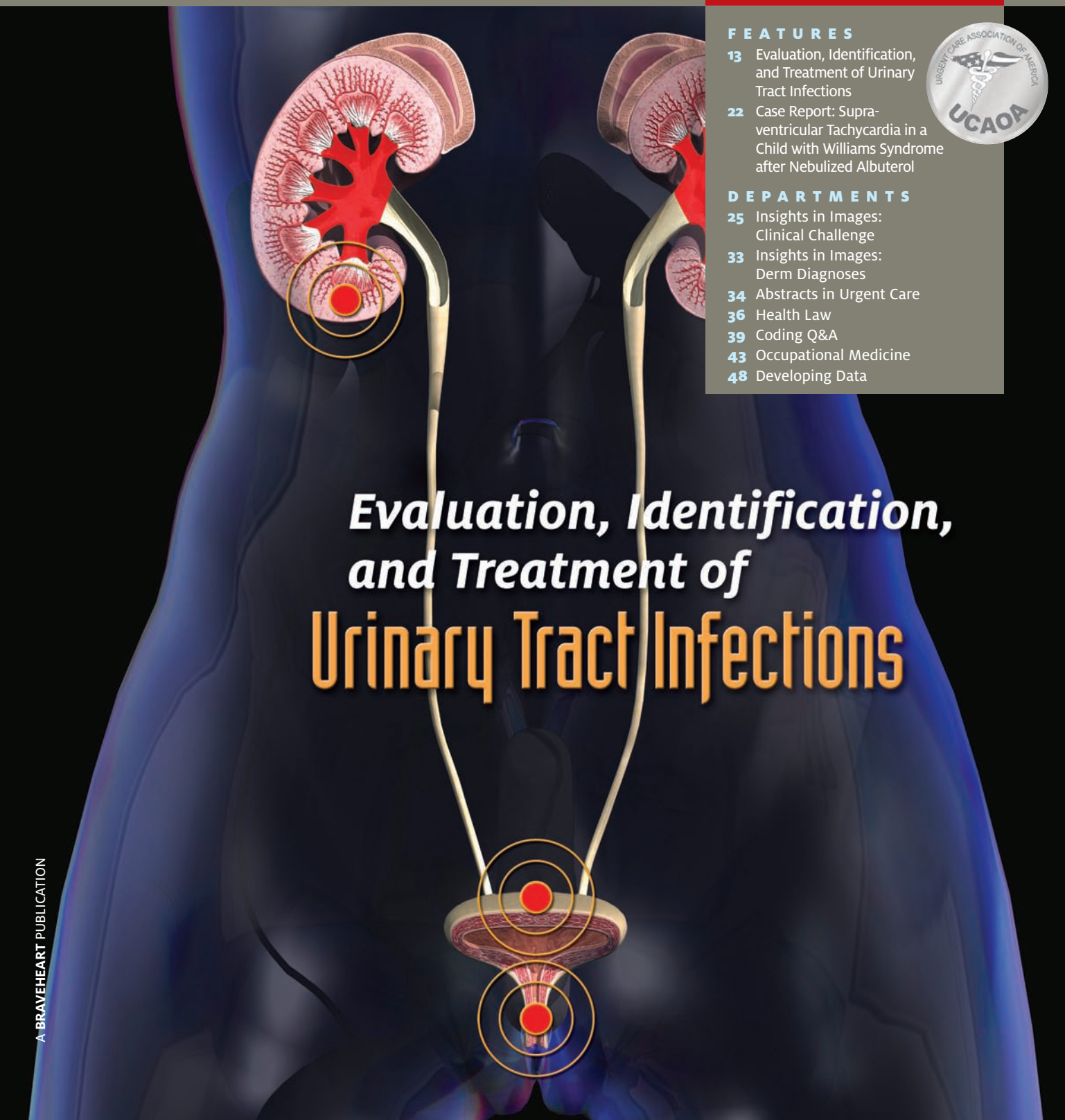
IN THIS ISSUE



Evaluation, Identification, and Treatment of Urinary Tract Infections

A **BRAVEHEART** PUBLICATION

IMPORTANT SAFETY INFORMATION

VIGAMOX® solution is indicated for the treatment of bacterial conjunctivitis caused by susceptible strains of the following organisms: Corynebacterium species‡, Micrococcus luteus‡, Staphylococcus aureus, S. epidermidis, S. haemolyticus, S. hominis, S. warneri‡, Streptococcus pneumoniae, Streptococcus viridans group, Acinetobacter lwoffii‡, Haemophilus influenzae, Haemophilus parainfluenzae‡, Chlamydia trachomatis (‡efficacy for this organism was studied in fewer than 10 infections). VIGAMOX® solution is contraindicated in patients with a history of hypersensitivity to moxifloxacin, to other fluoroquinolones, or to any of

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VIGAMOX® solution erases 99% of Streptococcus pneumoniae pathogens in vitro in as little as an hour.[1]†*

†In vitro data are not always indicative of clinical success or microbiological eradication in a clinical setting.

Vigamox®
(moxifloxacin HCl ophthalmic solution) 0.5% as base

The dosing of VIGAMOX® solution is one drop in the affected eye(s) 3 times daily for 7 days.

the components in this medication. NOT FOR INJECTION. VIGAMOX® solution should not be injected subconjunctivally, nor should it be introduced directly into the anterior chamber of the eye. In patients receiving systemically administered quinolones, including moxifloxacin, serious and occasionally fatal hypersensitivity (anaphylactic) reactions have been reported, some following the first dose. As with other anti-infectives, prolonged use of VIGAMOX® solution may result in overgrowth of non-susceptible organisms, including fungi. The safety and effectiveness of VIGAMOX® solution in infants below 1 year of age have not been established. The most frequently reported ocular adverse events were conjunctivitis, decreased visual acuity, dry eye, keratitis, ocular discomfort, ocular hyperemia, ocular pain, ocular pruritus, subconjunctival hemorrhage, and tearing. These events occurred in approximately 1%–6% of patients.

Please see brief summary of prescribing information on adjacent page.

Vigamox®

(moxifloxacin hydrochloride ophthalmic solution) 0.5% as base

DESCRIPTION: VIGAMOX® (moxifloxacin HCl ophthalmic solution) 0.5% is a sterile ophthalmic solution. It is an 8-methoxy fluoroquinolone anti-infective for topical ophthalmic use.

CLINICAL PHARMACOLOGY:
Microbiology:
The following *in vitro* data are also available, **but their clinical significance in ophthalmic infections is unknown.** The safety and effectiveness of VIGAMOX® solution in treating ophthalmological infections due to these microorganisms have not been established in adequate and well-controlled trials.

The following organisms are considered susceptible when evaluated using systemic breakpoints. However, a correlation between the *in vitro* systemic breakpoint and ophthalmological efficacy has not been established. The list of organisms is provided as guidance only in assessing the potential treatment of conjunctival infections. Moxifloxacin exhibits *in vitro* minimal inhibitory concentrations (MICs) of 2 µg/ml or less (systemic susceptible breakpoint) against most (≥ 90%) of strains of the following ocular pathogens.

Aerobic Gram-positive microorganisms:
Listeria monocytogenes
Staphylococcus saprophyticus
Streptococcus agalactiae
Streptococcus mitis
Streptococcus pyogenes
Streptococcus Group C, G and F

Aerobic Gram-negative microorganisms:
Acinetobacter baumannii
Acinetobacter calcoaceticus
Citrobacter freundii
Citrobacter koseri
Enterobacter aerogenes
Enterobacter cloacae
Escherichia coli
Klebsiella oxytoca
Klebsiella pneumoniae
Moraxella catarrhalis
Morganella morganii
Neisseria gonorrhoeae
Proteus mirabilis
Proteus vulgaris
Pseudomonas stutzeri

Anaerobic microorganisms:
Clostridium perfringens
Fusobacterium species
Prevotella species
Propionibacterium acnes

Other microorganisms:
Chlamydia pneumoniae
Legionella pneumophila
Mycobacterium avium
Mycobacterium marinum
Mycoplasma pneumoniae

Clinical Studies:
In two randomized, double-masked, multicenter, controlled clinical trials in which patients were dosed 3 times a day for 4 days, VIGAMOX® solution produced clinical cures on day 5-6 in 66% to 69% of patients treated for bacterial conjunctivitis. Microbiological success rates for the eradication of the baseline pathogens ranged from 84% to 94%. Please note that microbiologic eradication does not always correlate with clinical outcome in anti-infective trials.

INDICATIONS AND USAGE: VIGAMOX® solution is indicated for the treatment of bacterial conjunctivitis caused by susceptible strains of the following organisms:

Aerobic Gram-positive microorganisms:
Corynebacterium species*
*Micrococcus luteus**
Staphylococcus aureus
Staphylococcus epidermidis
Staphylococcus haemolyticus
Staphylococcus hominis
*Staphylococcus warneri**
Streptococcus pneumoniae
Streptococcus viridans group

Aerobic Gram-negative microorganisms:
*Acinetobacter lwoffii**
Haemophilus influenzae
*Haemophilus parainfluenzae**

Other microorganisms:
Chlamydia trachomatis

*Efficacy for this organism was studied in fewer than 10 infections.

CONTRAINDICATIONS: VIGAMOX® solution is contraindicated in patients with a history of hypersensitivity to moxifloxacin, to other quinolones, or to any of the components in this medication.

WARNINGS:
NOT FOR INJECTION.

VIGAMOX® solution should not be injected subconjunctivally, nor should it be introduced directly into the anterior chamber of the eye.

In patients receiving systemically administered quinolones, including moxifloxacin, serious and occasionally fatal hypersensitivity (anaphylactic) reactions have been reported, some following the first dose. Some reactions were accompanied by cardiovascular collapse, loss of consciousness, angioedema (including laryngeal, pharyngeal or facial edema), airway obstruction, dyspnea, urticaria, and itching. If an allergic reaction to moxifloxacin occurs, discontinue use of the drug. Serious acute hypersensitivity reactions may require immediate emergency treatment. Oxygen and airway management should be administered as clinically indicated.

PRECAUTIONS:
General: As with other anti-infectives, prolonged use may result in overgrowth of non-susceptible organisms, including fungi. If superinfection occurs, discontinue use and institute alternative therapy. Whenever clinical judgment dictates, the patient should be examined with the aid of magnification, such as slit-lamp biomicroscopy, and, where appropriate, fluorescein staining. Patients should be advised not to wear contact lenses if they have signs and symptoms of bacterial conjunctivitis.

Information for Patients: Avoid contaminating the applicator tip with material from the eye, fingers or other source.

Systemically administered quinolones including moxifloxacin have been associated with hypersensitivity reactions, even following a single dose. Discontinue use immediately and contact your physician at the first sign of a rash or allergic reaction.

Drug Interactions: Drug-drug interaction studies have not been conducted with VIGAMOX® solution. *In vitro* studies indicate that moxifloxacin does not inhibit CYP3A4, CYP2D6, CYP2C9, CYP2C19, or CYP1A2 indicating that moxifloxacin is unlikely to alter the pharmacokinetics of drugs metabolized by these cytochrome P450 isozymes.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Long term studies in animals to determine the carcinogenic potential of moxifloxacin have not been performed. However, in an accelerated study with initiators and promoters, moxifloxacin was not carcinogenic in rats following up to 38 weeks of oral dosing at 500 mg/kg/day (approximately 21,700 times the highest recommended total daily human ophthalmic dose for a 50 kg person, on a mg/kg basis).

Moxifloxacin was not mutagenic in four bacterial strains used in the Ames *Salmonella* reversion assay. As with other quinolones, the positive response observed with moxifloxacin in strain TA 102 using the same assay may be due to the inhibition of DNA gyrase. Moxifloxacin was not mutagenic in the CHO/HGPRT mammalian cell gene mutation assay. An equivocal result was obtained in the same assay when v79 cells were used. Moxifloxacin was clastogenic in the v79 chromosome aberration assay, but it did not induce unscheduled DNA synthesis in cultured rat hepatocytes. There was no evidence of genotoxicity *in vivo* in a micronucleus test or a dominant lethal test in mice.

Moxifloxacin had no effect on fertility in male and female rats at oral doses as high as 500 mg/kg/day, approximately 21,700 times the highest recommended total daily human ophthalmic dose. At 500 mg/kg orally there were slight effects on sperm morphology (head-tail separation) in male rats and on the estrous cycle in female rats.

Pregnancy: Teratogenic Effects.
Pregnancy Category C: Moxifloxacin was not teratogenic when administered to pregnant rats during organogenesis at oral doses as high as 500 mg/kg/day (approximately 21,700 times the highest recommended total daily human ophthalmic dose); however, decreased fetal body weights and slightly delayed fetal skeletal development were observed. There was no evidence of teratogenicity when pregnant Cynomolgus monkeys were given oral doses as high as 100 mg/kg/day (approximately 4,300 times the highest recommended total daily human ophthalmic dose). An increased incidence of smaller fetuses was observed at 100 mg/kg/day.

Since there are no adequate and well-controlled studies in pregnant women, VIGAMOX® solution should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers: Moxifloxacin has not been measured in human milk, although it can be presumed to be excreted in human milk. Caution should be exercised when VIGAMOX® solution is administered to a nursing mother.

Pediatric Use: The safety and effectiveness of VIGAMOX® solution in infants below 1 year of age have not been established.

There is no evidence that the ophthalmic administration of VIGAMOX® solution has any effect on weight bearing joints, even though oral administration of some quinolones has been shown to cause arthropathy in immature animals.

Geriatric Use: No overall differences in safety and effectiveness have been observed between elderly and younger patients.

ADVERSE REACTIONS:
The most frequently reported ocular adverse events were conjunctivitis, decreased visual acuity, dry eye, keratitis, ocular discomfort, ocular hyperemia, ocular pain, ocular pruritus, subconjunctival hemorrhage, and tearing. These events occurred in approximately 1-6% of patients.

Nonocular adverse events reported at a rate of 1-4% were fever, increased cough, infection, otitis media, pharyngitis, rash, and rhinitis.

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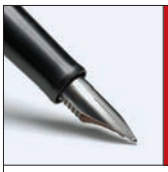


LETTER FROM THE EDITOR-IN-CHIEF

What About Retail Health?

There is plenty of posturing going on within organized medicine with regard to the "retail health" revolution. Concerns have been raised regarding continuity of care, the "corporatization" of medicine, kickbacks to pharmacies, and the quality of care provided by nurse practitioners and physician assistants.

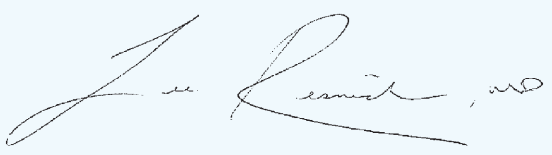
American Academy of Family Physicians, the American Medical Association, and the American Academy of Pediatrics have all chimed in. Only the AAP has come out consistently opposed to the idea on all grounds. The AMA and AAFP, while suggesting "guidelines" for retail health, do not clearly object to or support the idea.

In my role as president of the Urgent Care Association of America, I have been asked by many of you to represent the position of "Urgent Care Medicine" on the subject and to comment on how retail health changes the competitive climate for urgent care. Tall order, but here goes:

- *Is urgent care concerned about quality in retail health?*
  Yes. We are concerned about the quality of care delivered at all levels, including care delivered by urgent care physicians, nurse practitioners, and physician assistants. It should be noted that more than half of urgent care centers employ midlevel providers, and these practitioners have become a critical part of our practice landscape. I support improving the training of practitioners in both retail health and urgent care to ensure competency across the spectrum of services offered.
- *Is there concern over the corporatization of medicine with the retail model? Is urgent care really all that different?*
  This one is tricky, because, while retail health is clearly a corporate model, urgent care is really a mixed model. On the one hand, we are a physician-run model of care and ownership. However, corporate interest in urgent care is growing and plenty of venture capital beginning to flow. Some of you find this investment a "just reward" for building your networks of well-managed, profitable centers. Others feel they will be squeezed out by big corporate players with the ability to flood markets.
- *Should the potential for "kickbacks" to pharmacies be scrutinized?*
  Yes! This one's easy. We all have to play by this rule; so should pharmacies.
- *Is retail health a competitive industry for urgent care?*
  The obvious answer is yes. It is tempting for some to react to this competition with blanket criticism and fear-mongering about quality and safety. Smear campaigns have absolutely no effect in a free market that is already skeptical of the medical establishment. Retail health's success will be driven by public demand and perception of care, not scare tactics by "big brother."
- *So, how do we compete?*
  We show the customer that we do it better.

There already exists a physician-run model of 'convenient care' that far exceeds the capacity and scope of retail health clinics: urgent care medicine. There are an estimated 15,000 urgent care centers nationwide, far more than the 400 or so retail clinics. The scope of services offered is significantly broader, allowing the practitioner to provide more comprehensive illness and injury care usually without the need for referral to an emergency room or other facility. Wait times are comparable to retail clinics, and patient satisfaction high. With so much discussion about low cost, convenient alternatives to the emergency room, we should not ignore the important role already being played by our nation's urgent care centers.

UCAOA will continue to work hard to highlight the urgent care model and its contributions at the local, national, and international level. We hope you will join us in that effort to reinforce the message. Send a letter to the editor or an opinion piece to your local paper.



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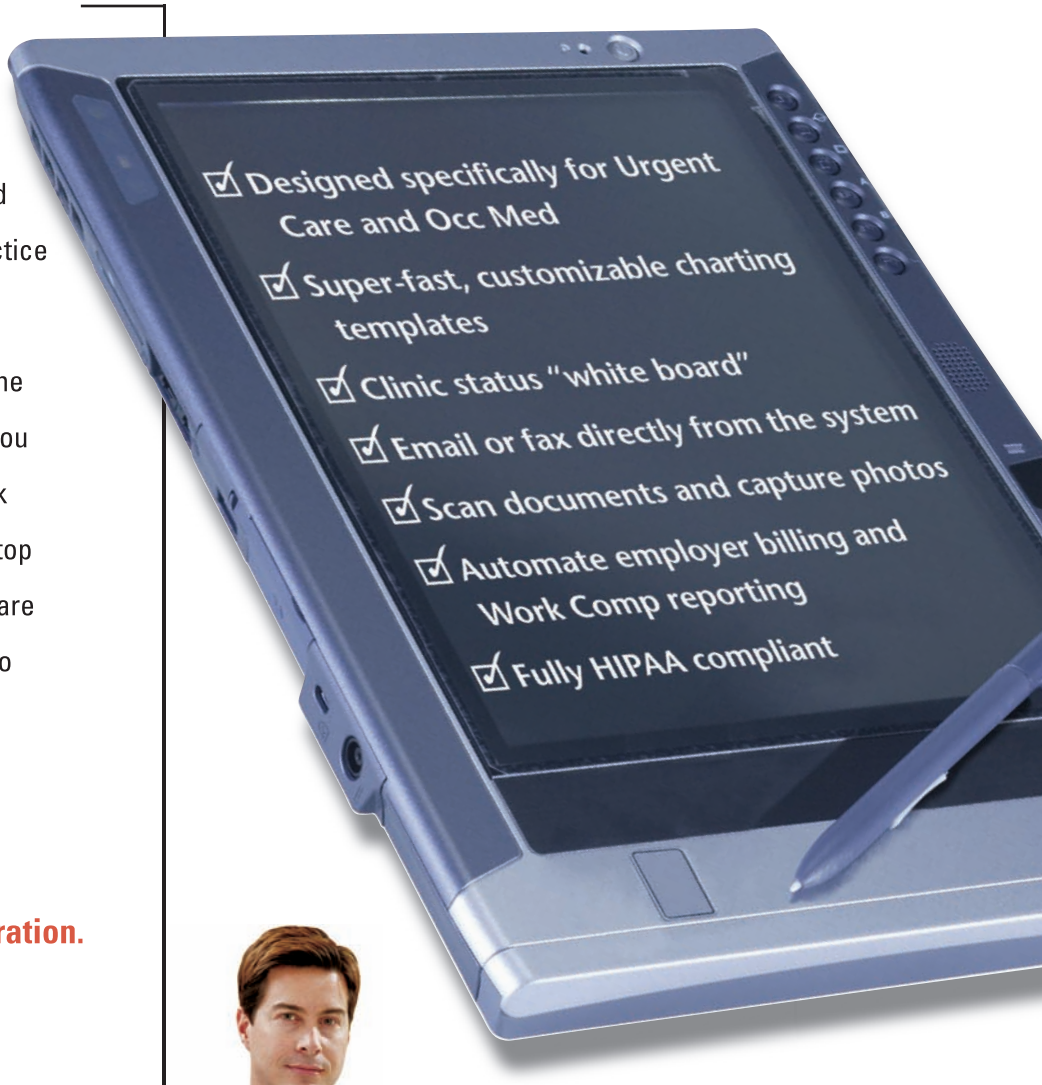

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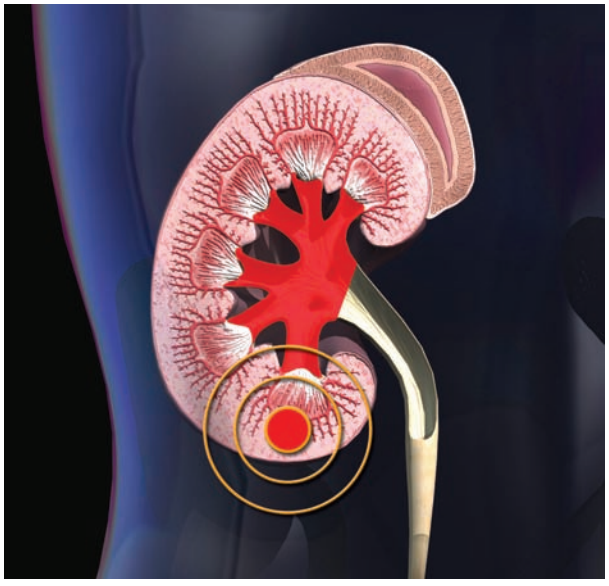


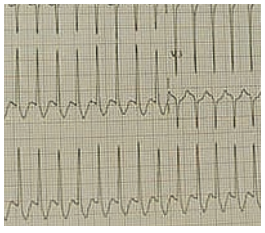
CLINICAL

13 *Evaluation, Identification, and Treatment of* Urinary Tract Infections

Urinary tract infections are the cause of a variety of complaints commonly seen in urgent care. Proper diagnosis, treatment, and patient education on preventive measures are key to optimal outcomes.

By William Gluckman, DO, MBA, FACEP and Karen Keaney Gluckman, MSN, APN, C, CWCN, CCCN

CASE REPORT



22 Supraventricular Tachycardia in a Child with Williams Syndrome after Nebulized Albuterol

Would you be cognizant of the possibility of supraventricular tachycardia after administration of nebulized albuterol in a young child? This report follows the case of a 2-year-old boy who presented initially with a three-day history of fever, cough, and wheezing.

By Muhammad Waseem, MD, Padma Gadde MD, and Gerard Devas, MD

Next month in JUCM: *Aggressive, timely treatment of common hand infections in the urgent care clinic. Also, a new installment of Bouncebacks and a case report on ectopic pregnancy.*

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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, *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.

JUCM CONTRIBUTORS

The fact that a presenting complaint is "common" does little to lessen its impact on the patient who's presenting with it. Easing that distress and ensuring the best possible outcomes may be "Job 1," to paraphrase the old Ford commercials, but clinicians also have a unique opportunity to help patients learn how to avoid recurrence of what ails them.

That point—along with other salient clinical points—is made in this month's featured clinical article, Evaluation, Identification, and Treatment of Urinary Tract Infections (page 13) by **William Gluckman, DO, MBA, FACEP** and **Karen Keaney Gluckman, APN, C, CWCN, CCCN.** Among the highlights of Dr. Gluckman's professional and academic appointments: associate medical director of emergency services and associate EMS medical director at St. Joseph's Regional Medical Center in Paterson NJ, assistant professor of surgery at New Jersey Medical School, and medical director of the New Jersey State Police Homeland Security Section's Urban Search and Rescue team. He is also a partner and medical director of Lifesaving Associates, LLC in Watchung, NJ, and a member of UCAOA. Ms. Gluckman is the coordinator of clinical education and a wound care, continence and ostomy nurse practitioner at St. Joseph's Regional Medical Center and is also a UCAOA member.

We're also proud to publish an original case report by **Muhammad Waseem**, **MD**, **Padma Gadde, MD**, and **Gerard Devas, MD**, who co-authored Supraventricular Tachycardia in a Child with Williams Syndrome after Nebulized Albuterol (page 22). Dr. Waseem is associate professor of emergency medicine (clinical pediatrics) at Weill Medical College of Cornell University in New York City and attending physician in emergency medicine at Lincoln Medical and Mental Health Center in the Bronx, NY. Dr. Devas is also an attending physician in emergency medicine at Lincoln; Dr. Gadde, formerly, was a pediatric resident there.

Finally, we're introducing a new feature: Derm Diagnoses will (literally) offer a glimpse of dermatological conditions seen in urgent care practice. This first case was submitted by **Marc R. Salzberg, MD, FACEP**. In addition to being a *JUCM* Editorial Board member and author (Acute Pain Management in Urgent Care Medicine, co-authored by Paolo T. Coppola, MD, FACEP, *JUCM* March 2007), Dr. Salzberg is a founding partner of Stat Health Immediate Medical Care, PC, in Smithtown, NY. In May he was elected to a seat on the UCAOA Board of Directors.

Regular *JUCM* contributors **John Shufeldt, MD, JD, MBA, FACEP** (Editorial Board member and Health Law columnist) and **David Stern**, **MD, CPC** (Coding Q & A columnist) and past contributor **Kevin Ralofsky, MBA** will join Editor-in-Chief **Lee Resnick, MD** at UCAOA's Fall Urgent Care Conference in Chicago October 26 and 27. We're grateful for their ongoing contributions, as well as those of **Nahum Kovalski, BSc, MDCM** and **Frank Leone, MBA, MPH**. Details on the UCAOA conference are available on the UCAOA website, *www.ucaoa.org*. ■

To Submit an Article to *JUCM*

JUCM, *The Journal of Urgent Care Medicine* encourages you to submit articles in support of our goal to provide practical, up-to-date clinical and practice management information to our readers—the nation's urgent care clinicians. Articles submitted for publication in ***JUCM*** should provide practical advice, dealing with clinical and practice management problems commonly encountered in day-to-day practice.

Manuscripts on clinical or practice management topics should be 2,600–3,200 words in length, plus tables, figures, pictures, and references. Articles that are longer than this will, in most cases, need to be cut during editing.

We prefer submissions by e-mail, sent as Word file attachments (with tables created in Word, in multicolumn format) to *editor@jucm.com*. The first page should include the title of the article, author names in the order they are to appear, and the name, address, and contact information (mailing address, phone, fax, e-mail) for each author.

Before submitting, we recommend reading "Instructions for Authors," available at *www.jucm.com*.

To Subscribe to *JUCM*

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To Find Urgent Care Job Listings

If you would like to find out about job openings in the field of urgent care, or would like to place a job listing, log on to *www.jucm.com* and click on "Urgent Care Job Search."

Happy Anniversary

LOU ELLEN HORWITZ, MA

It's hard to believe the first issue of *JUCM, The Journal of Urgent Care Medicine* was published a year ago.

In that inaugural issue, we at UCAOA were looking ahead to all of our plans for the coming year: launch of the new website to make our information more accessible to you, our new toll-free number to make it easier for you to reach us, a new benchmarking survey to continue our efforts adding data to the field, new opportunities for member involvement, and more.

With all of that behind us, we are looking ahead again. Here are some of the things you can look for in the coming months:

- **Redesigned website:** Yes, we are redoing the website again! As a result of your feedback telling us that you want it to be even easier to find urgent care content, we'll be rearranging the information we have so you can access, for instance, all of the coding resources (articles, courses, etc.) in one place.
- **More urgent care content:** Our two new staff positions, utilizing experts from the clinical and delivery sides of urgent care, will help us meet your needs for more content in all aspects of urgent care—on the website, in the forums, in our conferences, and in *JUCM*.
- **Better data:** We are delighted to have contracted with a leading researcher to launch the first formal, nationwide urgent care industry survey. We look forward to sharing the details of this exciting initiative in coming issues.
- **2008 convention, redesigned just for you:** We have taken a close look at all of your feedback about the past conventions, and believe you will love what we are planning for New Orleans next year. New elements include more time for small-group networking, visiting vendors, and leisure activities in the afternoons, more diverse content choices for participants at all experience levels on both the clinical and administrative sides of urgent care, and better ways for attendees with similar interests to connect with one another. We can't wait to tell you all about it!

With your investments in us through membership and conference attendance, we are able to invest more and more into contributing to the urgent care industry. Together, we are making a difference in the lives of patients and providers—so what I said in my first column is just as true a year later: it's an exciting time to be in urgent care! ■

Lou Ellen Horwitz is executive director of the Urgent Care Association of America. She may be contacted at *lhorwitz@ucaoa.org*.

A Note of Thanks to Our Peer Reviewers

Every clinical article that appears in *JUCM, The Journal of Urgent Care Medicine*, is written by a practitioner who understands the unique challenges inherent in the practice of urgent care medicine. We're indebted to each of them for sharing their time and expertise.

As a peer-reviewed journal, however, *JUCM* also relies upon the judgment of the clinicians who read, comment on, and raise queries about each article before it goes to press. They advise us on each topic's relevance in the urgent care practice environment, alert us to any "red flags" in the article, and provide valuable perspective.

Some reviewers are members of the *JUCM* Editorial Board or Advisory Board; some are authors themselves; and some are readers who want to help us achieve our mission of providing the best content in the urgent care marketplace in a unique, urgent care "voice."

The nature of the peer-review process requires anonymity, but we would be remiss if we did not collectively thank the following practitioners for reviewing articles that appeared in Volume 1 (October 2006 through September 2007) of *JUCM*:

Tony Bevil, MPS, PA-C
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If you would like to join our panel of peer reviewers, please e-mail Harris Fleming, editor of *JUCM*, at *hfleming@jucm.com*.

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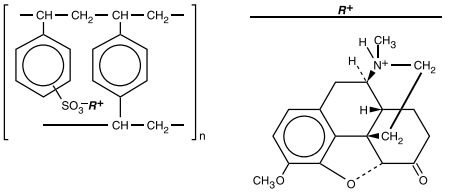
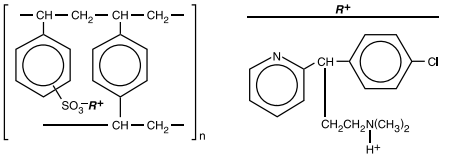
LR242A
Rev. 12/02

DESCRIPTION: Each teaspoonful (5 mL) of TUSSIONEX Pennkinetic Extended-Release Suspension contains hydrocodone polistirex equivalent to 10 mg of hydrocodone bitartrate and chlorpheniramine polistirex equivalent to 8 mg of chlorpheniramine maleate. TUSSIONEX Pennkinetic Extended-Release Suspension provides up to 12-hour relief per dose. Hydrocodone is a centrally-acting narcotic antitussive. Chlorpheniramine is an antihistamine. TUSSIONEX Pennkinetic Extended-Release Suspension is for oral use only.

Hydrocodone Polistirex: sulfonated styrene-divinylbenzene copolymer complex with 4,5α-epoxy-3-methoxy-17-methylmorphinan-6-one.



Chlorpheniramine Polistirex: sulfonated styrene-divinylbenzene copolymer complex with 2-[*p*-chloro-α-[2-(dimethylamino)ethyl]-benzyl]pyridine.



Inactive Ingredients: Ascorbic acid, D&C Yellow No. 10, ethylcellulose, FD&C Yellow No. 6, flavor, high fructose corn syrup, methylparaben, polyethylene glycol 3350, polysorbate 80, pregelatinized starch, propylene glycol, propylparaben, purified water, sucrose, vegetable oil, xanthan gum.

CLINICAL PHARMACOLOGY: Hydrocodone is a semisynthetic narcotic antitussive and analgesic with multiple actions qualitatively similar to those of codeine. The precise mechanism of action of hydrocodone and other opiates is not known; however, hydrocodone is believed to act directly on the cough center. In excessive doses, hydrocodone, like other opium derivatives, will depress respiration. The effects of hydrocodone in therapeutic doses on the cardiovascular system are insignificant. Hydrocodone can produce miosis, euphoria, physical and psychological dependence.

Chlorpheniramine is an antihistamine drug (H_1 receptor antagonist) that also possesses anticholinergic and sedative activity. It prevents released histamine from dilating capillaries and causing edema of the respiratory mucosa.

Hydrocodone release from TUSSIONEX Pennkinetic Extended-Release Suspension is controlled by the Pennkinetic System, an extended-release drug delivery system which combines an ion-exchange polymer matrix with a diffusion rate-limiting permeable coating. Chlorpheniramine release is prolonged by use of an ion-exchange polymer system.

Following multiple dosing with TUSSIONEX Pennkinetic Extended-Release Suspension, hydrocodone mean (S.D.) peak plasma concentrations of 22.8 (5.9) ng/mL occurred at 3.4 hours. Chlorpheniramine mean (S.D.) peak plasma concentrations of 58.4 (14.7) ng/mL occurred at 6.3 hours following multiple dosing. Peak plasma levels obtained with an immediate-release syrup occurred at approximately 1.5 hours for hydrocodone and 2.8 hours for chlorpheniramine. The plasma half-lives of hydrocodone and chlorpheniramine have been reported to be approximately 4 and 16 hours, respectively.

INDICATIONS AND USAGE: TUSSIONEX Pennkinetic Extended-Release Suspension is indicated for relief of cough and upper respiratory symptoms associated with allergy or a cold.

CONTRAINDICATIONS: Known allergy or sensitivity to hydrocodone or chlorpheniramine.

WARNINGS: Respiratory Depression: As with all narcotics, TUSSIONEX Pennkinetic Extended-Release Suspension produces dose-related respiratory depression by directly acting on brain stem respiratory centers. Hydrocodone affects the center that controls respiratory rhythm, and may produce irregular and periodic breathing. Caution should be exercised when TUSSIONEX Pennkinetic Extended-Release Suspension is used postoperatively and in patients with pulmonary disease or whenever ventilatory function is depressed. If respiratory depression occurs, it may be antagonized by the use of naloxone hydrochloride and other supportive measures when indicated (see OVERDOSAGE).

Head Injury and Increased Intracranial Pressure: The respiratory depressant effects of narcotics and their capacity to elevate cerebrospinal fluid pressure may be markedly exaggerated in the presence of head injury, other intracranial lesions or a pre-existing increase in intracranial pressure. Furthermore, narcotics produce adverse reactions which may obscure the clinical course of patients with head injuries.

Acute Abdominal Conditions: The administration of narcotics may obscure the diagnosis or clinical course of patients with acute abdominal conditions.

Obstructive Bowel Disease: Chronic use of narcotics may result in obstructive bowel disease especially in patients with underlying intestinal motility disorder.

Pediatric Use: In pediatric patients, as well as adults, the respiratory center is sensitive to the depressant action of narcotic cough suppressants in a dose-dependent manner. Benefit to risk ratio should be carefully considered especially in pediatric patients with respiratory embarrassment (e.g., croup) (see PRECAUTIONS).

PRECAUTIONS: General: Caution is advised when prescribing this drug to patients with narrow-angle glaucoma, asthma or prostatic hypertrophy.

Special Risk Patients: As with any narcotic agent, TUSSIONEX Pennkinetic Extended-Release Suspension should be used with caution in elderly or debilitated patients and those with severe impairment of hepatic or renal function, hypothyroidism, Addison's disease, prostatic hypertrophy or urethral stricture. The usual precautions should be observed and the possibility of respiratory depression should be kept in mind.

Information for Patients: As with all narcotics, TUSSIONEX Pennkinetic Extended-Release Suspension may produce marked drowsiness and impair the mental and/or physical abilities required for the performance of potentially hazardous tasks such as driving a car or operating machinery; patients should be cautioned accordingly. TUSSIONEX Pennkinetic Extended-Release Suspension must not be diluted with fluids or mixed with other drugs as this may alter the resin-binding and change the absorption rate, possibly increasing the toxicity. Keep out of the reach of children.

Cough Reflex: Hydrocodone suppresses the cough reflex; as with all narcotics, caution should be exercised when TUSSIONEX Pennkinetic Extended-Release Suspension is used postoperatively, and in patients with pulmonary disease.

Drug Interactions: Patients receiving narcotics, antihistaminics, antipsychotics, antianxiety agents or other CNS depressants (including alcohol) concomitantly with TUSSIONEX Pennkinetic Extended-Release Suspension may exhibit an additive CNS depression. When combined therapy is contemplated, the dose of one or both agents should be reduced.

The use of MAO inhibitors or tricyclic antidepressants with hydrocodone preparations may increase the effect of either the antidepressant or hydrocodone.

The concurrent use of other anticholinergics with hydrocodone may produce paralytic ileus.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Carcinogenicity, mutagenicity and reproductive studies have not been conducted with TUSSIONEX® Pennkinetic® (hydrocodone polistirex and chlorpheniramine polistirex) Extended-Release Suspension.

Pregnancy: Teratogenic Effects – Pregnancy Category C. Hydrocodone has been shown to be teratogenic in hamsters when given in doses 700 times the human dose. There are no adequate and well-controlled studies in pregnant women. TUSSIONEX Pennkinetic Extended-Release Suspension should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nonteratogenic Effects: Babies born to mothers who have been taking opioids regularly prior to delivery will be physically dependent. The withdrawal signs include irritability and excessive crying, tremors, hyperactive reflexes, increased respiratory rate, increased stools, sneezing, yawning, vomiting and fever. The intensity of the syndrome does not always correlate with the duration of maternal opioid use or dose.

Labor and Delivery: As with all narcotics, administration of TUSSIONEX Pennkinetic Extended-Release Suspension to the mother shortly before delivery may result in some degree of respiratory depression in the newborn, especially if higher doses are used.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk and because of the potential for serious adverse reactions in nursing infants from TUSSIONEX Pennkinetic Extended-Release Suspension, a decision should be made whether to discontinue nursing or to discontinue the drug, taking into account the importance of the drug to the mother.

Pediatric Use: Safety and effectiveness of TUSSIONEX Pennkinetic Extended-Release Suspension in pediatric patients under six have not been established (see WARNINGS).

Geriatric Use: Clinical studies of TUSSIONEX did not include sufficient numbers of subjects aged 65 and over to determine whether they respond differently from younger subjects. Other reported clinical experience has not identified differences in responses between the elderly and younger patients. In general, dose selection for an elderly patient should be cautious, usually starting at the low end of the dosing range, reflecting the greater frequency of decreased hepatic, renal, or cardiac function, and of concomitant disease or other drug therapy.

This drug is known to be substantially excreted by the kidney, and the risk of toxic reactions to this drug may be greater in patients with impaired renal function. Because elderly patients are more likely to have decreased renal function, care should be taken in dose selection, and it may be useful to monitor renal function.

ADVERSE REACTIONS: Central Nervous System: Sedation, drowsiness, mental clouding, lethargy, impairment of mental and physical performance, anxiety, fear, dysphoria, euphoria, dizziness, psychic dependence, mood changes.

Dermatologic System: Rash, pruritus.

Gastrointestinal System: Nausea and vomiting may occur; they are more frequent in ambulatory than in recumbent patients. Prolonged administration of TUSSIONEX Pennkinetic Extended-Release Suspension may produce constipation.

Genitourinary System: Ureteral spasm, spasm of vesicle sphincters and urinary retention have been reported with opiates.

Respiratory Depression: TUSSIONEX Pennkinetic Extended-Release Suspension may produce dose-related respiratory depression by acting directly on brain stem respiratory centers (see OVERDOSAGE).

Respiratory System: Dryness of the pharynx, occasional tightness of the chest.

DRUG ABUSE AND DEPENDENCE: TUSSIONEX Pennkinetic Extended-Release Suspension is a Schedule III narcotic. Psychic dependence, physical dependence and tolerance may develop upon repeated administration of narcotics; therefore, TUSSIONEX Pennkinetic Extended-Release Suspension should be prescribed and administered with caution. However, psychic dependence is unlikely to develop when TUSSIONEX Pennkinetic Extended-Release Suspension is used for a short time for the treatment of cough. Physical dependence, the condition in which continued administration of the drug is required to prevent the appearance of a withdrawal syndrome, assumes clinically significant proportions only after several weeks of continued oral narcotic use, although some mild degree of physical dependence may develop after a few days of narcotic therapy.

OVERDOSAGE: Signs and Symptoms: Serious overdosage with hydrocodone is characterized by respiratory depression (a decrease in respiratory rate and/or tidal volume, Cheyne-Stokes respiration, cyanosis), extreme somnolence progressing to stupor or coma, skeletal muscle flaccidity, cold and clammy skin, and sometimes bradycardia and hypotension. Although miosis is characteristic of narcotic overdose, mydriasis may occur in terminal narcosis or severe hypoxia. In severe overdosage apnea, circulatory collapse, cardiac arrest and death may occur. The manifestations of chlorpheniramine overdosage may vary from central nervous system depression to stimulation.

Treatment: Primary attention should be given to the reestablishment of adequate respiratory exchange through provision of a patent airway and the institution of assisted or controlled ventilation. The narcotic antagonist naloxone hydrochloride is a specific antidote for respiratory depression which may result from overdosage or unusual sensitivity to narcotics including hydrocodone. Therefore, an appropriate dose of naloxone hydrochloride should be administered, preferably by the intravenous route, simultaneously with efforts at respiratory resuscitation. Since the duration of action of hydrocodone in this formulation may exceed that of the antagonist, the patient should be kept under continued surveillance and repeated doses of the antagonist should be administered as needed to maintain adequate respiration. For further information, see full prescribing information for naloxone hydrochloride. An antagonist should not be administered in the absence of clinically significant respiratory depression. Oxygen, intravenous fluids, vasopressors and other supportive measures should be employed as indicated. Gastric emptying may be useful in removing unabsorbed drug.

DOSAGE AND ADMINISTRATION: Shake well before using.

Adults: 1 teaspoonful (5 mL) every 12 hours;
do not exceed 2 teaspoonfuls in 24 hours.

Children 6-12: 1/2 teaspoonful every 12 hours;
do not exceed 1 teaspoonful in 24 hours.

Not recommended for children under 6 years of age (see PRECAUTIONS).

HOW SUPPLIED: TUSSIONEX Pennkinetic (hydrocodone polistirex and chlorpheniramine polistirex) Extended-Release Suspension is a gold-colored suspension.

NDC 53014-548-67 473 mL bottle

Shake well. Dispense in a well-closed container. Store at 59°-86°F (15°-30°C).

CELLTECH

Celltech Pharmaceuticals, Inc.
Rochester, NY 14623 USA

Rev. 12/02
Tussionex® Pennkinetic® Extended-Release Suspension: US Patent No. 4,762,709.2. LR242A

Evaluation, Identification, and Treatment of Urinary Tract Infections

Urgent message: Urinary tract infections are a common cause of abdominal pain and a common presenting complaint in urgent care. Proper diagnosis, treatment, and patient education on preventive measures are key to optimal outcomes.

William Gluckman, DO, MBA, FACEP, Karen Keaney Gluckman, MSN, APN, C, CWCN, CCCN

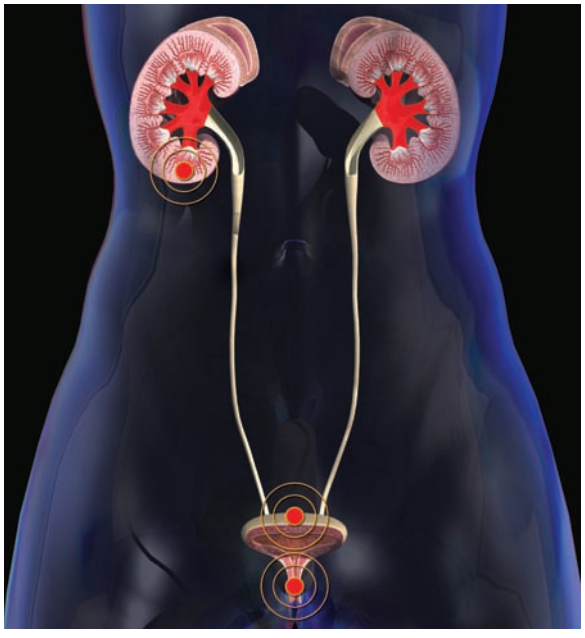
Introduction

The global term *urinary tract infection* (UTI) incorporates cystitis and infection involving the bladder (a lower tract source), as well as pyelonephritis, an infection involving the kidneys (an upper tract source).

Acute cystitis occurs when bacteria attach to and/or invade the bladder wall.

Pyelonephritis is a more serious disorder that can lead to bacteremia, sepsis, or renal abscess formation.

Interstitial cystitis (also known as painful bladder syndrome) is a disorder that causes chronic abdominal pain and urinary symptoms, particularly frequency and dysuria, but by definition does not involve an infection.



Acute cystitis is very common, affecting 8 million to 10 million people per year and prompting 9.6 million doctor visits at a cost of over $4.5 billion. Forty percent to 50% of women will have at least one UTI in their lifetimes, and approximately 20% of those who get a UTI will have a recurrent episode.

Urinary tract infections can affect male and female infants, children, and adults. Each of these groups has differences in causes, treatments, and work-ups. This article will focus on adult female infections.

Pathophysiology

Urine is a good culture medium for bacteria, as it is typically sterile but can become infected either by retrograde transmission of pathogens up the urethra or hematogenously.

Women are at great risk for UTI primarily because of the significantly shorter urethra and closer proximity to the rectum. The female genitalia may become colonized with pathogenic bacteria that can more

FIGURE 1.
Fimbriae seen on *E coli*.

Source: Hybrid Medical Animation / Photo Researchers, Inc.

easily enter the urethra. In addition, woman lack the bacteriostatic protection that prostatic secretions offer the male.

Typically, the urinary tract is kept sterile via urination, which causes a washing out of any bacteria that may have entered the urethra.

Periurethral colonization is limited by the acidic pH of the vagina, which is maintained by non-pathogenic bacteria such as *Lactobacillus* species. When the pH is altered, bacteria are more likely to grow, colonize the area, and thus increase the likelihood of urethral entry.

Risk Factors for getting a UTI include:

- sexual intercourse
- diaphragm use
- spermicidal use
- pregnancy
- urethral catheterization
- previous UTI
- maternal history
- female sex
- postmenopausal

Common Pathogens

Escherichia coli is the number-one uropathogen, accounting for approximately 85% to 90% of UTIs. This gram-negative rod has the ability to adhere to the bladder wall by its finger-like projections known as fimbriae, or P Pili (**Figure 1**). When instituting empiric therapy, this organism must be given consideration.

Enterococcus is a troublesome gram-negative pathogen found primarily in the gut but it may infect the urine. Many resistant strains exist and treatment may be challenging. Infection with this organism typically occurs from poor hygiene or recent instrumentation.

Pseudomonas aeruginosa is another gram-negative pathogen more commonly found in nursing homes and frequently hospitalized patients. *P aeruginosa* is an opportunistic pathogen and can be difficult to treat secondary to its lipopolysaccharide outer membrane, fimbriae, and its antibiotic-resistant plasmids.

Proteus mirabilis is a gram-negative rod that, like *E coli*, possesses fimbriae to help attach to urinary tract epithelium. It also has the ability to produce urease which converts urea into ammonia. This leads to alkalinization of the urine and facilitates struvite stone formation.

Klebsiella pneumoniae is an encapsulated gram-negative rod that aside from causing pneumonia (predominantly in alcoholics), causes UTI. It is capable of producing extended-spectrum β lactamase (ESLBs), making this organism potentially resistant to penicillins and cephalosporins.

Staphylococcus saprophyticus is a coagulase-negative, gram-positive coccus that is the most common gram-positive agent causing UTIs and is most often found in young women.

Diagnosis

Clinical symptoms of UTIs classically include urinary frequency, urgency, and dysuria; being cognizant of additional symptoms may help differentiate among various types of infection.

Suprapubic pain often accompanies cystitis.

Right or left upper quadrant abdominal pain or back pain may accompany pyelonephritis. Fever is also common in pyelonephritis but is generally not present in cystitis.

Costovertebral angle tenderness, or pain elicited by gentle percussion over the back in proximity to the kidneys, is often present in pyelonephritis and excludes a diagnosis of simple cystitis.

Physical exam findings may reveal abdominal tenderness. Significant guarding or rebound tenderness should lead the urgent care clinician to consider potentially more serious disorders, such as pelvic inflammatory disease, appendicitis, ectopic pregnancy, or a ruptured bowel and should warrant transfer to an emergency department for a more detailed work-up.

Urine dipsticks are the mainstay laboratory diagnostic for urgent care practitioners.

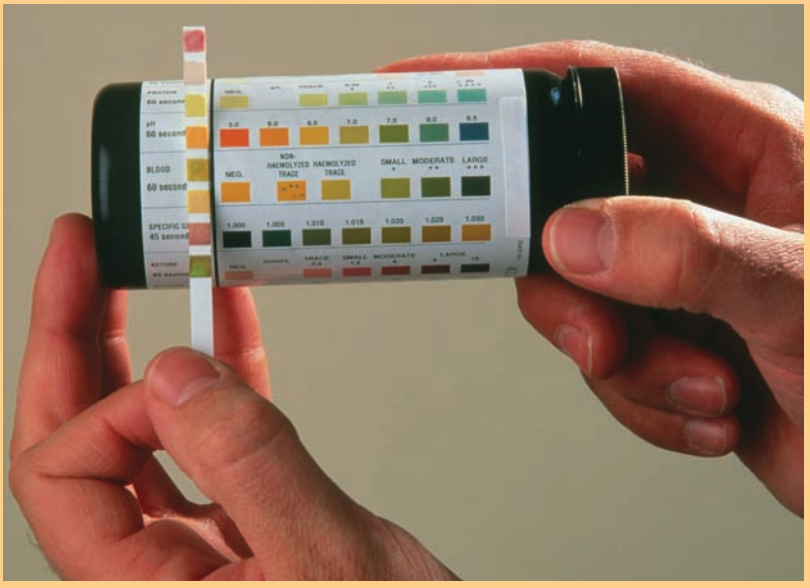
It is important to assure that a clean catch specimen is obtained. This is done by instructing the patient to spread her labia with one hand and wipe with an antiseptic wipe from front to back. Then she should begin to urinate into the bowl and have the cup placed midstream. An adequate specimen may be obtained from menstruating women by having them place a fresh tampon just before the cleaning procedure described above.

Colorimetric test strips (**Figure 2**) have a very good sensitivity and specificity for blood, leukocyte esterase, and nitrite. UTI symptoms in the presence of leucocytes are adequate to make a diagnosis of UTI. Occasionally, low-volume pyuria (i.e., 1 WBC/HPF to 10 WBCs/HPF) may result in a false negative leukocyte esterase on dipstick.

In the face of strong clinical presentation, urine microscopy may be helpful; if not available, empiric therapy can be started. In approximately 10% of cystitis cases, gross or microscopic hematuria is present. This condition is known as hemorrhagic cystitis and is triggered by certain pathogens capable of greater penetration into the bladder wall and releasing hemolysins, causing bleeding.

Some species such as *Proteus* and occasionally *E coli* will convert nitrates normally found in the urine to nitrites. A finding of positive nitrites on urine dipstick is highly specific for a UTI but its absence does not exclude the diagnosis.

FIGURE 2.
Multiple test colorimetric urine



Source: Saturn Stills / Photo Researchers, Inc.

A good practice is to always perform a urine pregnancy test in all women of childbearing years. All pregnant women with even asymptomatic bacteruria should be treated, and it is important to know pregnancy status when making an antibiotic selection.

Historically, urine cultures demonstrating 10^5 colony-forming units (CFUs) have been used to define infection; however, utilizing 10^2 CFUs in symptomatic women still yields an accurate diagnosis. Routine urine cultures in simple acute cystitis are probably unnecessary. Patients who have recurrent UTIs, failed recent antibiotic therapy, have been recently hospitalized, undergone urinary or vaginal instrumentation, or have had a Foley catheter in the previous two weeks may have a resistant or less common organism and a culture may be helpful in guiding therapy.

Differential Diagnosis

Though frequency, urgency, and dysuria in the face of pyuria most often signal a UTI, these complaints and findings are also found in urethritis, bacterial and candidal vaginitis, genital herpes infection, and pelvic inflammatory disease. Since the causative agents of these entities may be different than those causing UTIs, it is important to distinguish the pathologies in order to select appropriate antibiotic therapy.

It is also important to obtain a sexual history from the patient and to ask about related complaints such as vaginal discharge. The answers may prompt you to perform a pelvic exam to look for vaginal discharge, herpetic lesions, or uncover cervical motion or adnexal tenderness.

Additional considerations:

- Kidney stones may also present with dysuria and abdominal pain.
- It is more common to see hematuria (gross or microscopic) than pyuria.
- The presentation of classic renal colic is a severe flank pain that radiates to the lower quadrants or groin, is not changed by position, and is intermittent and often severe.
- Painless hematuria may be secondary to previous radiation therapy or be secondary to hemorrhagic cystitis.
- Always consider bladder cancer as a cause of hematuria and consider sending the urine for cytology or referring the patient promptly to a urologist.
- Appendicitis has been reported to irritate the ureter, causing some hematuria and pyuria. Patients presenting with RLQ pain, anorexia, fever and/or vomiting without CVA tenderness should be ruled out for appendicitis.

Treatment

Antibiotic therapy is the mainstay therapy for UTIs. Simple cystitis can be treated with oral antibiotics. Pyelonephritis may be selectively treated with oral antibiotics, but 10% to 15% of patients will require hospital admission for IV therapy. Outpatient therapy may be considered for patients with:

- no significant comorbidities such as diabetes or HIV
- little or no vomiting and able to tolerate PO fluids and meds
- pain controllable with oral medications
- good hydration status
- infection not complicated/associated with a kidney stone or GU system abnormality.

Pregnancy considerations

Pregnant women in the first trimester may be treated the same as non-pregnant woman. Those in the third trimester with pyelonephritis should be admitted. Typically, women in the second trimester require individualized care; either outpatient or hospitaliza-

tion can be appropriate, depending upon reliability of the patient and access to prompt follow-up.

Women who have frequent UTIs, especially in pregnancy, may benefit from being on a low-dose antibiotic for several months. Those women that seem to have recurrent infections after sexual intercourse often benefit from a single post-coital dose of an antibiotic.

Women prone to infection after intercourse may benefit from a post-coital dose of antibiotic.

Following is rationale for choosing among antibiotics commonly employed in the treatment of UTIs:

- **Fluoroquinolones** such as ciprofloxacin (Cipro) and levofloxacin (Levaquin) inhibit DNA synthesis by inhibiting DNA gyrase and are thus bactericidal. They have excellent coverage of most uropathogens and have the benefit of once- or twice-daily dosing. Another benefit: to date, this class seems to have fewer issues with resistance than others, though of course this may change over time.

  On the other hand, fluoroquinolones are among the more expensive medications used to treat UTI, though ciprofloxacin has come down in price over the years. Consideration should be given to those patients without a prescription plan. Fluoroquinolones should not be used in pregnant women or in children.
- **Trimethoprim/sulfamethoxazole** (TMP/SMZ; Bactrim, Septra) blocks bacterial dihydrofolate reductase necessary to convert PABA into folic acid. It has been a commonly prescribed agent for patients not allergic to sulfa drugs.

  TMP/SMZ has an advantage over other agents as it is inexpensive, but some areas of the country are noting *E coli* with increasing resistance—sometimes exceeding 20%. While we are not aware of a resource for such information, developing a relationship with a nearby hospital microbiology lab may allow you to obtain the annual antibiograms most labs generate; this gives the sensitivities of pathogens encountered in the institution.
- **Tetracyclines** such as doxycycline (Vibramycin) are bacteriostatic agents that inhibit protein synthesis by binding to the 30S ribosomal subunit. Doxycycline has very good activity against *E coli* and has the advantage of covering chlamydia and mycoplasma. These agents are commonly implicated in urethritis which can occasionally be mistaken for cystitis. They should not be used in pregnancy.
- **Nitrofurantoin** (Macrobid) is bactericidal in urine and works by inhibiting bacterial acetyl-coenzyme A, thus interfering with carbohydrate metabolism, and by inhibiting DNA and RNA synthesis, thus disrupting cell wall formation.

  These multiple mechanisms may explain why this drug has developed very little resistance over the years. Nitrofurantoin has excellent clinical activity against *E coli* and *S Saprophyticus*. It also has some activity against *Enterococcus* and *Klebsiella* but not *Proteus* or *Pseudomonas*. This drug is especially useful in pregnancy, as it is rated Category B, but it is not approved for use in the treatment of pyelonephritis.
- **Cephalosporins**, such as the first-generation drug cephalexin (Keflex), inhibit bacterial cell wall synthesis. Because of its pregnancy category B rating, this class has great utility in pregnant women, however resistance rates to *E coli* are higher than with many of the other medications.
- **Penicillins** inhibit bacterial cell wall synthesis like the cephalosporins. Amoxicillin (Amoxil) had been a first-line therapy, but significant resistance to *E coli* has been noted and it is best reserved for treatment of *Enterococcus* and in pregnancy, where the organism is resistant to nitrofurantoin.
- **Fosfomycin** (Monurol) is in a unique class of antibiotics and works by inhibiting cell wall synthesis and by blocking bacterial adherence to epithelial cells. Fosfomycin offers the advantage of a single-dose regimen, which is a great benefit if compliance is thought to be a problem; however, reported cure rates are only about 80%.

Cranberry juice is considered an adjunctive therapy in the treatment and prevention of UTIs. Cranberry and blueberry juice, as well as some red wines, contain tannins which have been shown to decrease the binding ability of *E coli* to binding sites. The drug phenazopyridine (Pyridium) is an azo dye that acts as a bladder analgesic and decreases the urinary discomfort associated with cystitis. It should be used only for two days, as typically symptoms are improving by this point and be-

cause this drug may induce methemoglobinemia.

Patients with G6PD deficiency are at greater risk for hemolytic anemia.

In addition, patients should be warned that this drug will turn their urine, sweat, and tears orange in color.

Finally, contact lens users should be advised to switch to wearing glasses while on this medication.

Duration of treatment depends on the complexity of the infection and the drug selected. For simple, uncomplicated UTIs (i.e., no renal stone present, no urinary tract abnormalities, not recurrent and in a nonimmunocompromised patient), a three-day course of trimethoprim/sulfamethoxazole or a fluoroquinolone has been shown to be as effective with less side effects as a seven- or 10-day course. Though single-dose regiments are effective for postcoital prophylaxis, recurrence rates are fairly high.

Doxycycline and nitrofurantoin require a seven- to 10-day course. Pyelonephritis should be treated for 10 to 14 days. TMP/SMZ should be used only if resistance patterns are favorable in your area (<20% to 25% resistance).

Follow-up

Typical, uncomplicated UTIs do not require follow-up if symptoms are resolved. All patients should be told at discharge to return to the urgent care clinic or to their primary care physician if symptoms persist or do not improve. As noted previously, some cases will necessitate referral to a urologist or ED.

Prevention

Time devoted to educating patients on the causes of UTIs, as well as preventive measures, is well spent and likely to be appreciated.

Some women are predisposed to UTIs. Whether due to genetic or anatomical factors, however, women can reduce their risk by:

- voiding soon after sex (to "wash out" bacteria)
- voiding soon after a bath and avoiding prolonged soaking in a bath
- assuring adequate lubrication during sex, using a water-soluble lubricant such as K-Y jelly if needed, thus preventing abrasion to the protective barrier of the urethra
- making sure that wiping after urination and a bowel movement is from front to back; this keeps colonic bacteria from the anus away from the urethra
- voiding as soon as the urge is felt and not hold-

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ing urine, thus preventing pathogen replication, should urine become contaminated
- drinking plenty of water daily
- wearing cotton underwear and loose-fitting clothes, particularly in hot weather (to minimize a warm, moist environment and to prevent periurethral colonization)
- removing wet bathing suits promptly
- avoidance of feminine deodorant sprays/perfumes and douches (to prevent irritation of the urethra)
- drinking cranberry juice daily (to help prevent adherence of some bacteria).

Summary

Urinary tract infections are common in the urgent care setting. It is important to remember the common causative organisms and appropriate antibiotic selections. Pyelonephritis is a more serious disorder that can be managed in an outpatient setting for select patients with good follow-up. Sometimes, urinary symptoms or positive urine dipsticks may indicate an infection that is not in the urinary system, such as a sexually transmitted infection, and can be much more serious and require different treatment. A good history with review of systems and a physical exam should help make the distinction. ■

Resources and Suggested Reading

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DAIICHI

July 2007

02R07109A

Case Report

Supraventricular Tachycardia in a Child with Williams Syndrome after Nebulized Albuterol

Urgent message: Clinicians must be prepared for the possibility of supraventricular tachycardia after administration of nebulized albuterol in patients of any age, especially in the presence of heart disease.

Muhammad Waseem, MD, Padma Gadde, MD, and Gerard Devas, MD

Introduction

Asthma is the most common lung disease in children. Five percent of children in the United States have asthma, and status asthmaticus—the leading cause of admission due to asthma exacerbation—accounts for approximately 10% of visits to pediatric emergency departments.[1]

Here, we present a case involving a 2-year-old asthmatic boy with Williams syndrome (WS) who developed supraventricular tachycardia (SVT) following standard administration of albuterol.

This case report emphasizes the need for increased awareness among urgent care and emergency physicians, and describes the use of adenosine in the treatment of SVT due to β_2 agonist albuterol.

Case

A 2-year-old boy with WS presented to the emergency department with a three-day history of fever, cough, and wheezing. He received three doses of nebulized albuterol and was diagnosed with reactive airway disease and bilateral otitis media. He was discharged on oral amoxicillin and prednisolone and albuterol MDI.

The patient returned to the emergency department two days later with similar symptoms and vomiting. He had been receiving albuterol MDI every six hours for the previous two days. His parents reported that he vomited shortly after receiving albuterol.

Previously, he had one episode of pneumonia that improved with oral antibiotics.

In the emergency department, he was in moderate respiratory distress with a temperature of 102.3°F, respiratory rate of 34 breaths per minute, heart rate of 169 beats per minute, and oxygen saturation of 95%. He had coarse breath sounds with wheezing.

Cardiac examination revealed a regular rate and rhythm and no murmur. The boy was brought to an asthma room because of his respiratory distress and wheezing and started on nebulized albuterol. A chest radiograph revealed right upper lobe pneumonia. The heart size and pulmonary vascularity were normal. The patient was placed on a pulse oximeter.

The following were noted:

- Three episodes of vomiting during second nebulizer treatment
- Heart rate of 242 beats per minute

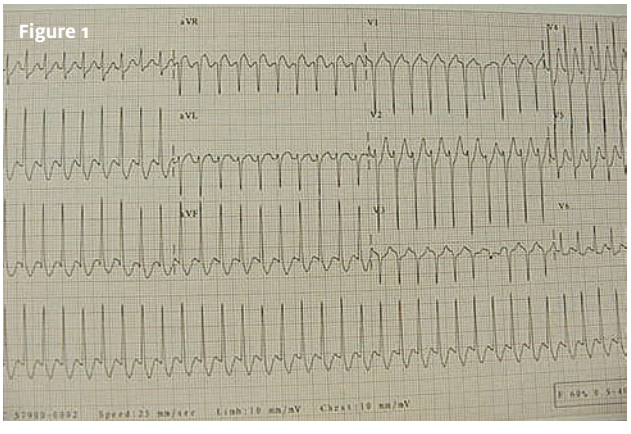

Figure 1

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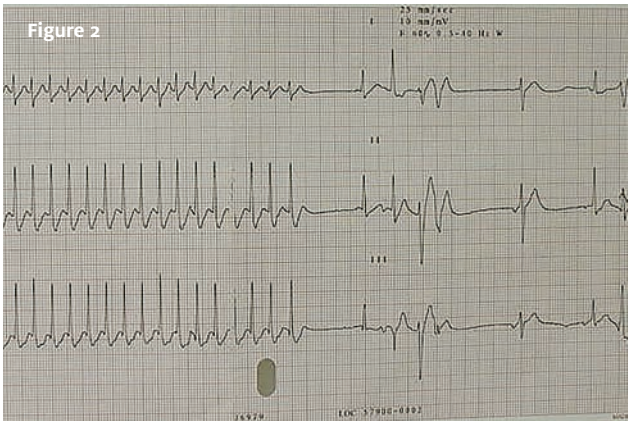

- A 12-lead electrocardiogram consistent with supraventricular tachycardia was obtained (**Figure 1**).
- The patient was quite anxious during this episode of tachycardia. A bag of ice was applied over his face for 20 seconds, but vagal maneuvers failed to convert his tachycardia to normal sinus rhythm. A rapid intravenous push of adenosine (0.1 mg/kg) converted SVT to normal sinus rhythm (**Figure 2**).

The child was admitted to the pediatric intensive care unit for cardiac monitoring and further treatment. Later in his hospital course, he was treated with an albuterol nebulizer without any additional episodes of supraventricular tachycardia. On follow-up, the patient was doing well on albuterol MDI without any further cardiac complications.

Discussion

Albuterol, a direct-acting β_2 agonist, is used as a mainstay in the treatment of acute asthma and is considered to have minimal cardiovascular effects. However, tachycardia and cardiac arrhythmia have been reported after albuterol and other β_2 agonist administration.[2-5] Mild tachycardia is common when patients are first exposed to β_2 agonists, even the most recent highly selective β_2 adrenergic receptor agents.[6]

Supraventricular tachycardia is the most common symptomatic arrhythmia in children. Fifty percent cases of supraventricular tachycardia are idiopathic.

Predisposing factors for SVT include congenital heart disease, fever, and sympathomimetics. Our patient had all of these factors. He was diagnosed as having WS in early infancy.

Williams syndrome is a recognizable pattern of malformation with mental retardation, mild growth deficiency, characteristic facies and temperament, and cardiovascular disease. The most prevalent arrhythmias in patients with WS are presumed to be ventricular tachyarrhythmias, but supraventricular tachycardia may occur.[7]

In addition to Williams's syndrome, our patient had a history of fever and use of nebulized albuterol in the emergency department.

The question remains whether his episode of SVT was due solely to the use of albuterol or to a combination of factors including fever and the presence of WS. Sudden death is also a recognized complication of WS.

Acute management of SVT in children involves the use of vagal maneuvers and intravenous adenosine. Intravenous adenosine has been found to be safe and highly effective in the management of SVT in infants and children. Adenosine has no absolute contraindications. The most common side effects are flushing, dyspnea, and chest pain.[8]

Although rapid intravenous adenosine infusion has been uniformly well tolerated, bronchoconstriction in asthmatic patients has also been reported.[9] Previous studies of the use of adenosine also have excluded patients with asthma for the fear of inducing bronchoconstriction.[10,11]

Conclusion

Supraventricular tachycardia, although rare, can occur after nebulized albuterol administration—especially in the presence of heart disease. Strict cardiac monitoring is essential in children with underlying cardiac condition in order to make the diagnosis and appropriate treatment. ■

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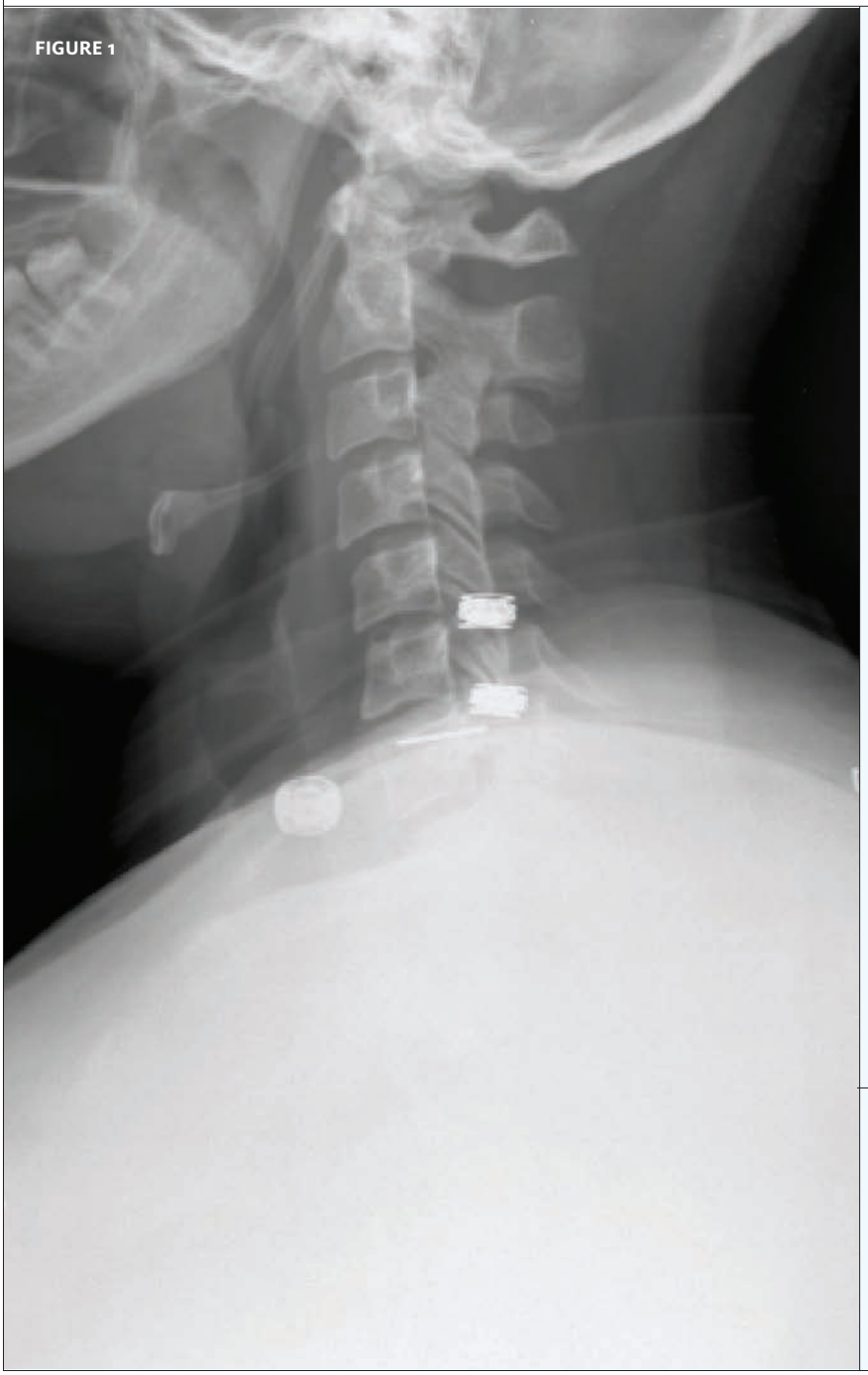
INSIGHTS IN IMAGES

CLINICAL CHALLENGE: CASE 1

In each issue, *JUCM* will challenge your diagnostic acumen with a glimpse of x-rays, electrocardiograms, and photographs of dermatologic 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*.

FIGURE 1



The patient is a 35-year-old Caucasian female who presented with dysphagia and progressively worsening neck pain. No history of injury was reported.

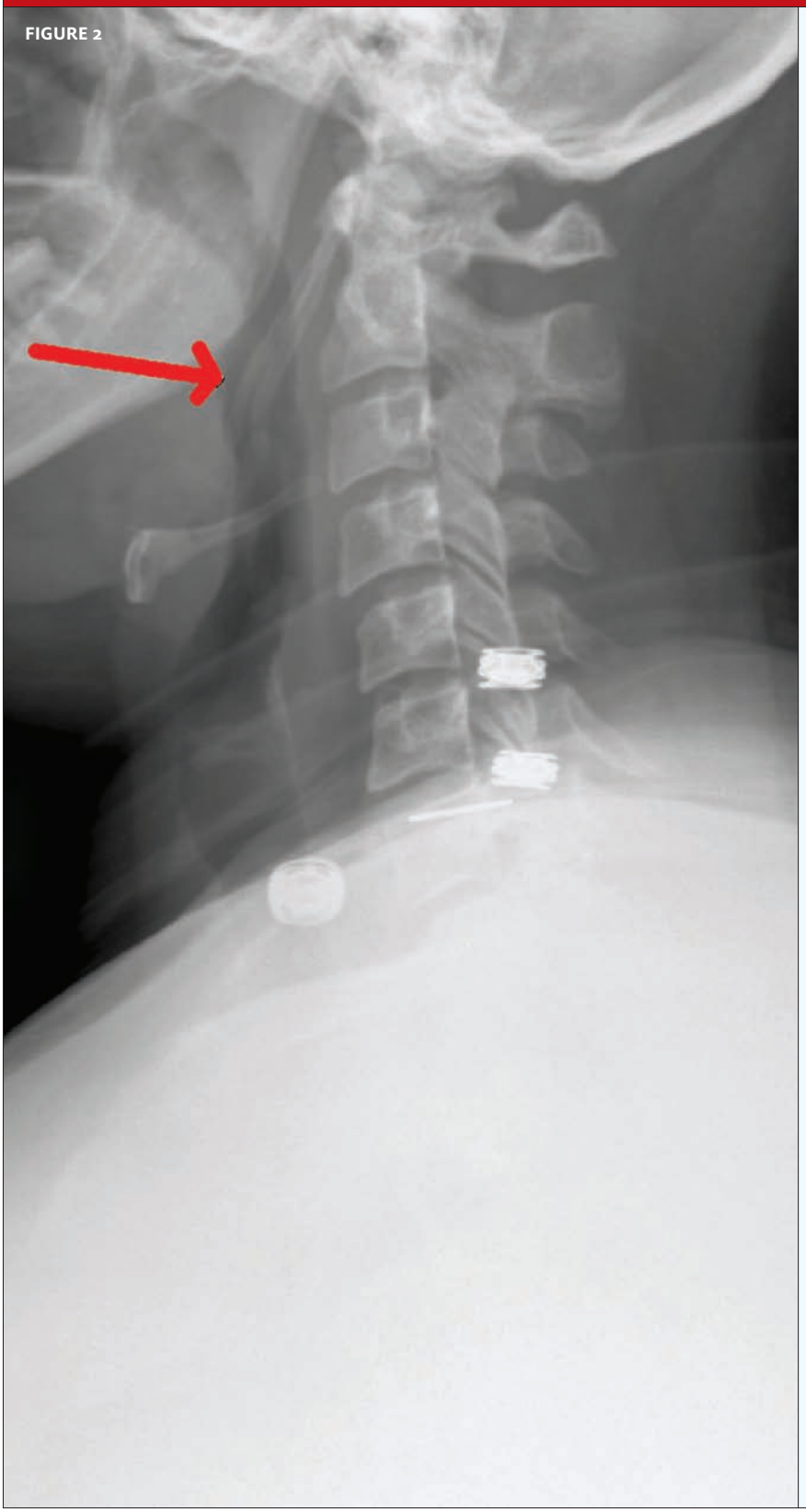
Neurovascular exam was normal.

View the x-ray taken (F**igure 1**) and consider what your diagnosis and next steps would be. Resolution of the case is described on the next page.

Note: In the September issue of JUCM, *Figure 1 of Clinical Challenge: Case 1 included an x-ray whose key portion was blocked from view. A corrected version can be found at www.jucm.com.*

THE RESOLUTION

FIGURE 2



The correct diagnosis is Eagle syndrome. Lateral view plain radiograph shows calcification of the stylohyoid ligament.

Treatment with non-steroidal anti-inflammatory drugs was initiated, with referral to ENT for further evaluation.

Acknowledgment: The patient was treated and the case presented by Rajesh Davit, MD, chief resident, Family Medicine Residency, Greenville Hospital System University Medical Center, Greenville, SC.

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CLINICAL CHALLENGE: CASE 2

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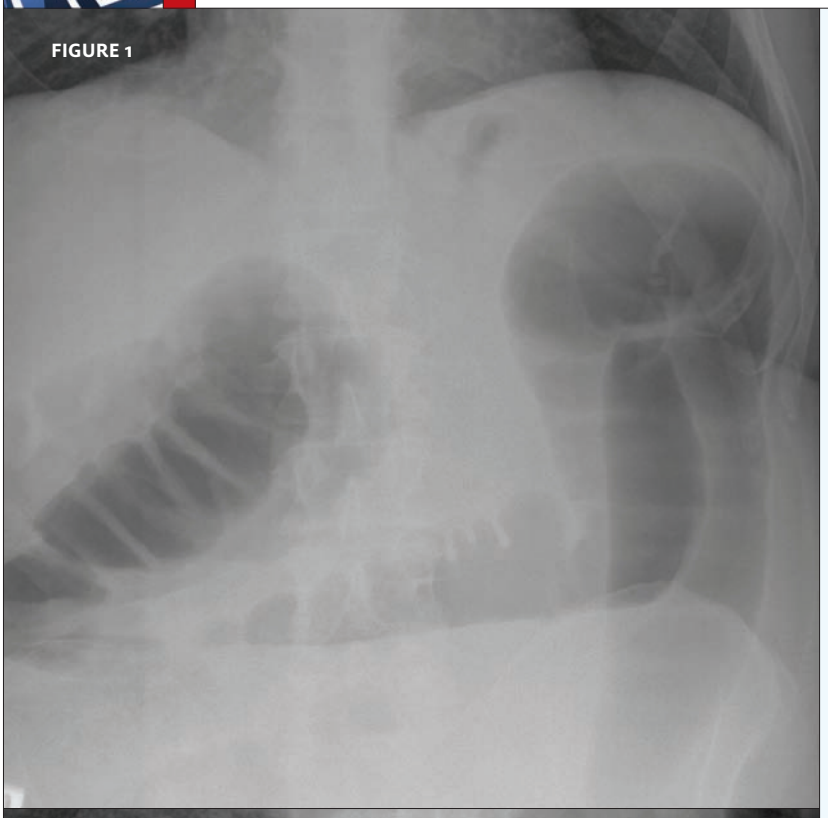
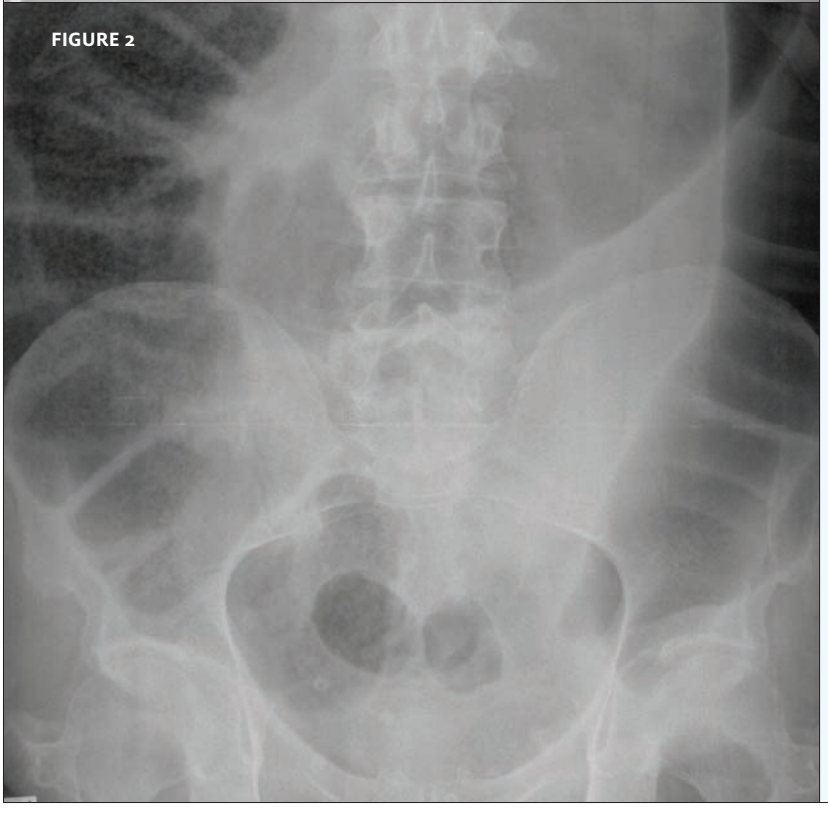


FIGURE 2



The patient is a 52-year-old tourist who presents with a four-day day history of abdominal pain, constipation, *not* passing gas, and nausea. The patient was not comfortable but was hemodynamically stable. Temperature was normal, pulse was 94, BP was 195/99.

The abdomen was markedly distended. WBC was 11.

View the x-rays taken (**Figure 1** and **Figure 2**) and consider what your diagnosis and next steps would be. Resolution of the case is described on the next page.

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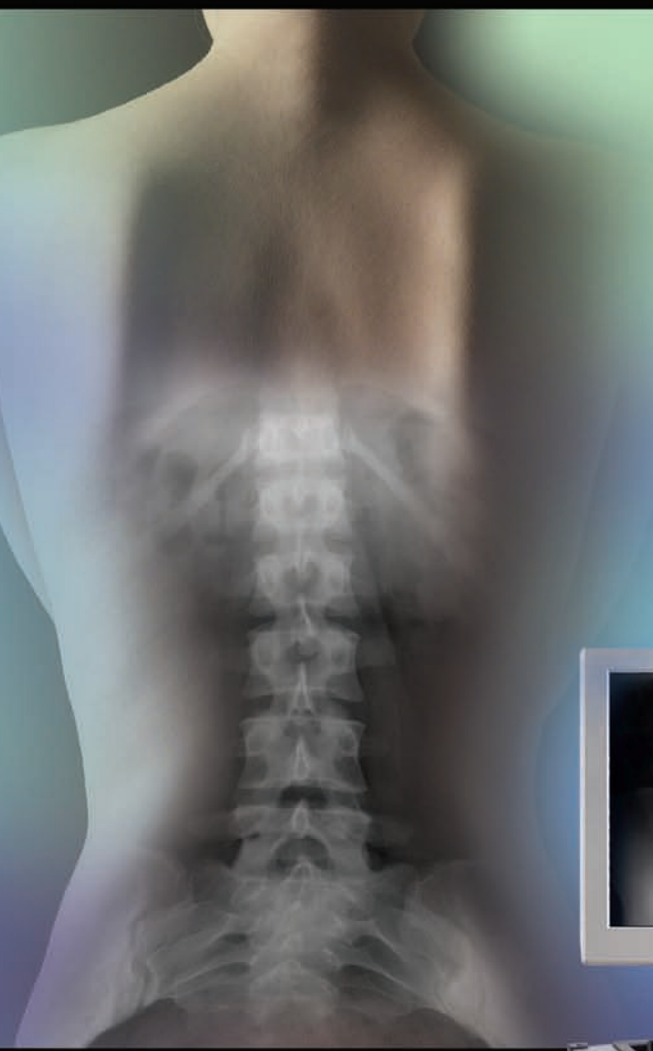

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THE RESOLUTION

FIGURE 3

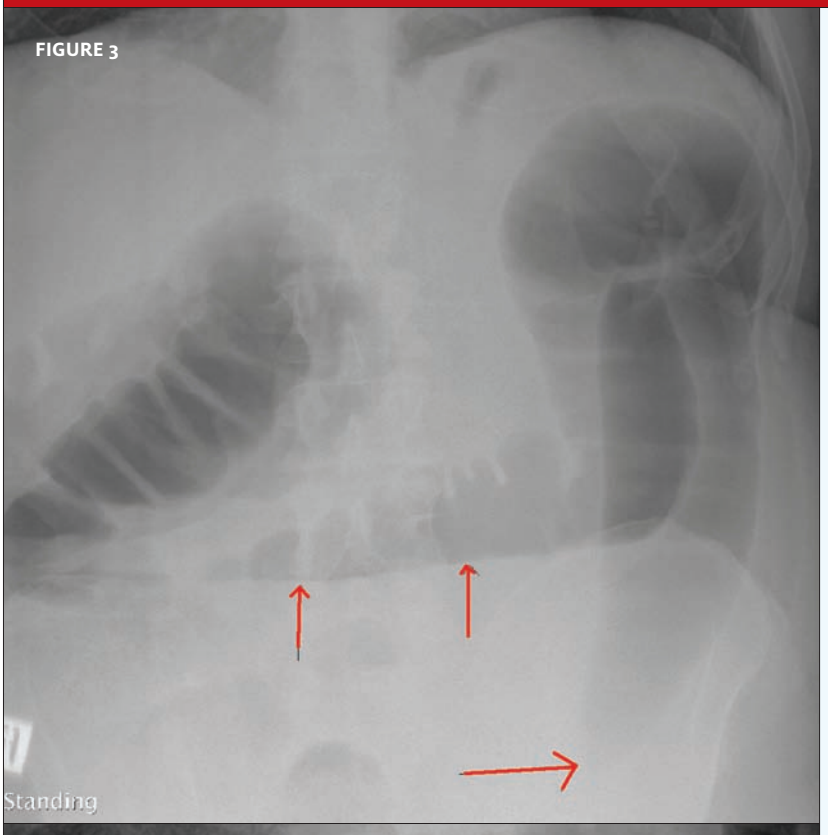
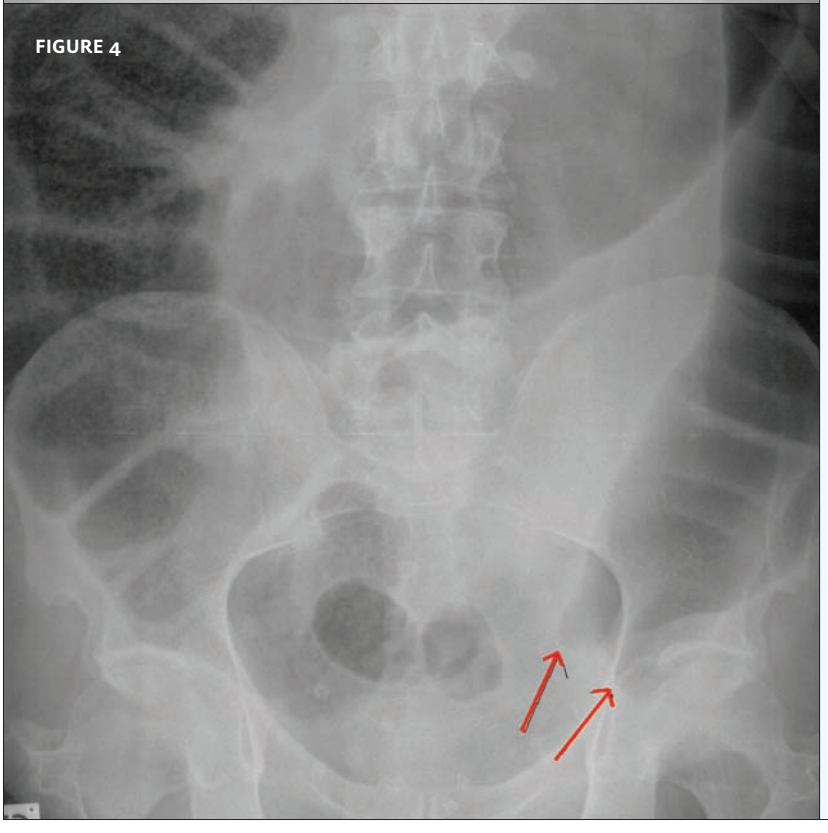


FIGURE 4



Review of the x-ray reveals a great deal of gas and fluid in the large bowel down until the sigmoid. There is no distension of the small bowel. There is no air, nor contents in the rectum. At first glance, one might suspect obstruction at the level of the sigmoid.

The patient was referred to hospital and, initially, a diagnosis of sigmoid volvulus was made. However, CT revealed the symptoms were actually the result of incarcerated inguinal hernia.

Acknowledgment: Scott Fields, MD, was the radiologist on this case, which was presented by Nahum Kovalski, BSc, MDCM.

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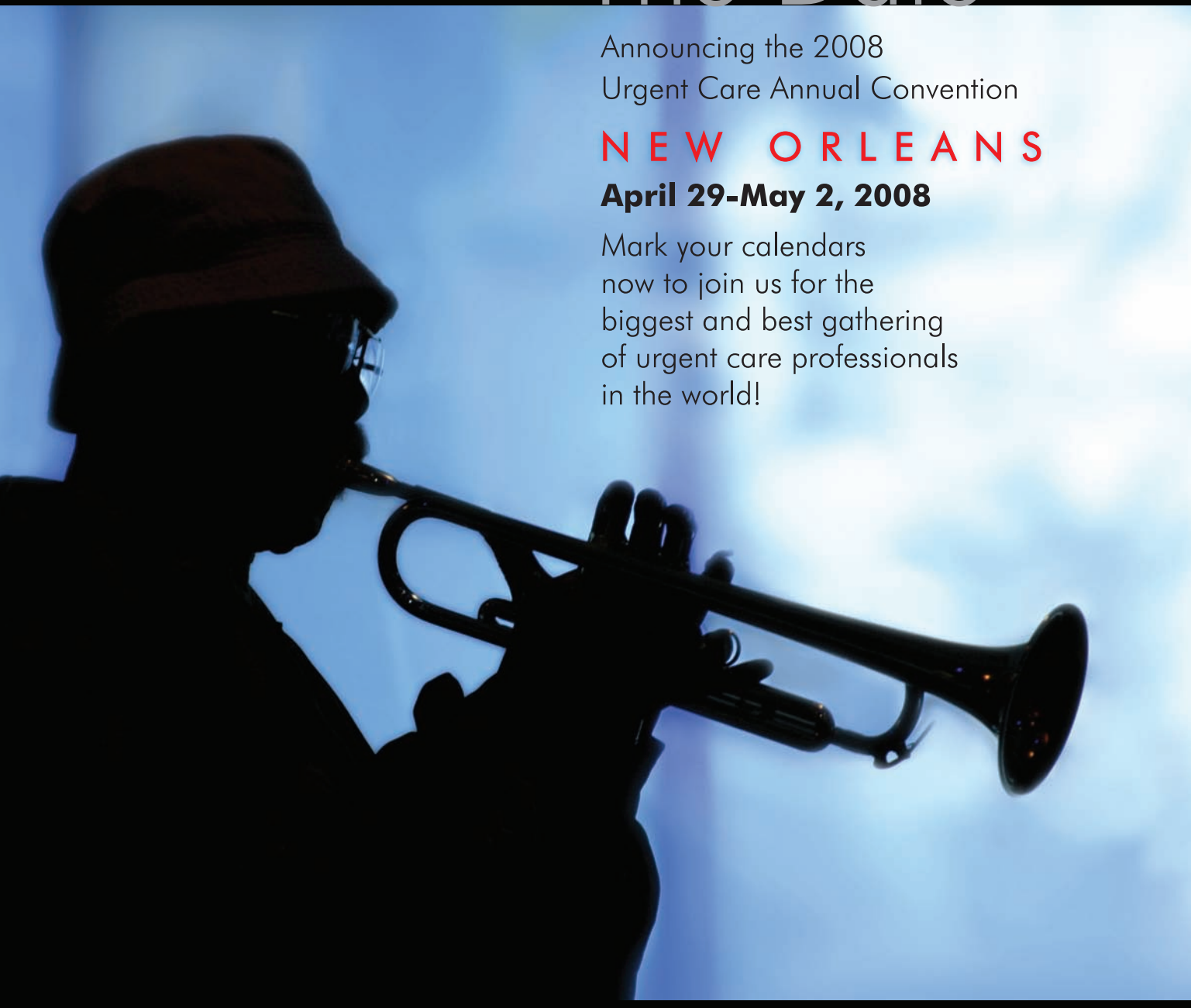

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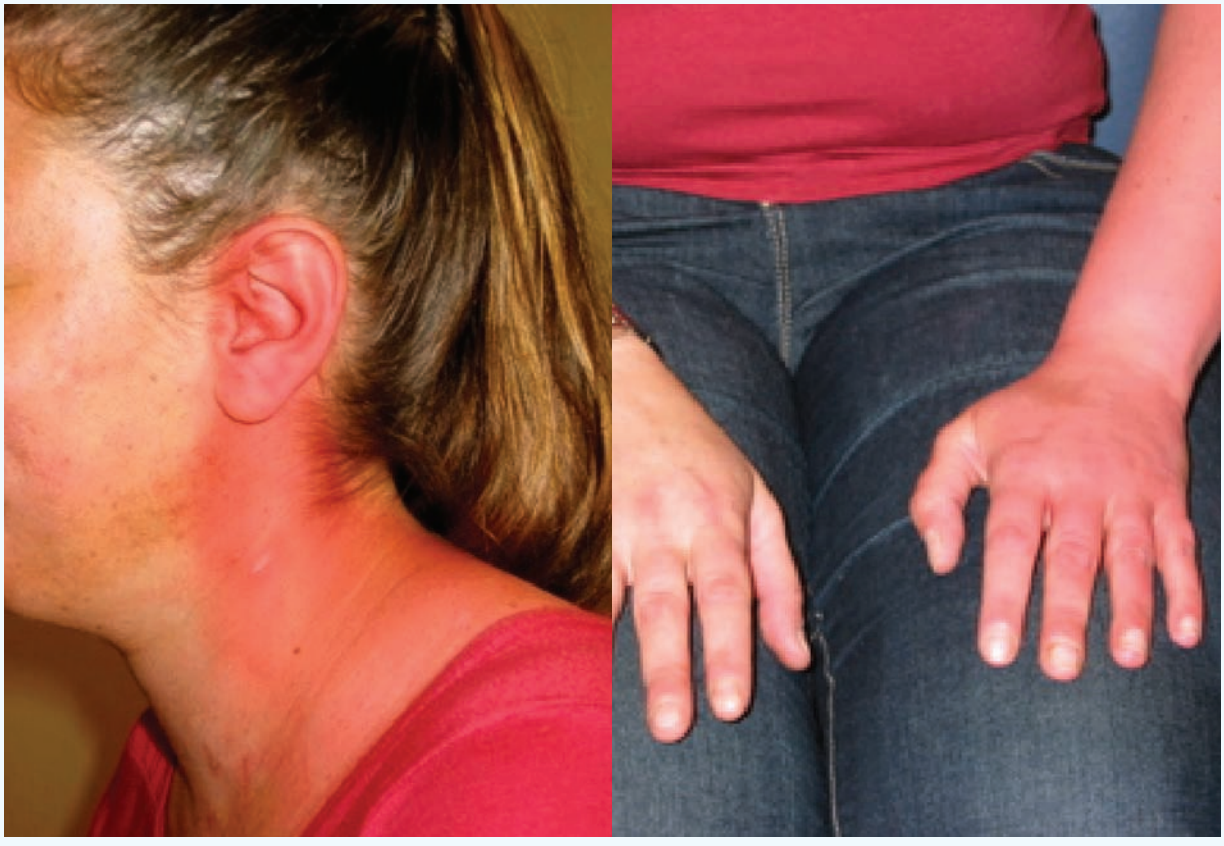

The patient pictured presented with two hours of intense pain and redness along the left side of her head and down her left arm.

Though this could easily be mistaken for an infectious process, it was actually reflex sympathetic dystrophy (RSD), also referred to as complex regional pain syndrome (CRPS) type I.

By any name, however, this is a rare and poorly understood neurological condition. It may manifest by way of sensory, focal autonomic, or motor abnormalities. Pain is a common presenting complaint; cutaneous vasomotor changes may also be present, as was the case with this patient.

The patient was treated for the acute symptoms in the urgent care setting with the standard of care for this syndrome—diazepam, gabapentin (Neurontin), and acetaminophen/oxycodone (Percocet)—and referred to a neurologist, in whose care she underwent ganglion steroid injections. She experienced slight resolution of symptoms and then remained asymptomatic for three months.

She presented to urgent care again when the condition flared, despite the fact that she was on medication. She is still under the neurologist's care and does not have a very good prognosis, as this entity tends to get worse despite treatment.

Typically, the prognosis for such patients is hard to predict; however, in some patients the condition spreads to other areas of the body. ■

On Steroids for Bronchiolitis, Risk for Thromboembolism, Vocal Cord Dysfunction, and Surgery for Sciatica and Ingrown Toenails

■ NAHUM KOVALSKI, BSc, MDCM

Each month, Dr. Nahum Kovalski reviews a handful of abstracts from, or relevant to, urgent care practices and practitioners. For the full reports, go to the source cited under each title.

A Controlled Clinical Trial of Steroids for Bronchiolitis

Key point: One dose of oral dexamethasone was no different from placebo.

Citation: A multicenter, randomized, controlled trial of dexamethasone for bronchiolitis. *N Engl J Med*. 2007;357:331-339.

Bronchiolitis is the leading cause of hospitalization of infants in the U.S. Use of steroids for infants with bronchiolitis remains controversial because of the lack of high-quality, sufficiently powered studies.

In a multisite, double-blind clinical trial, researchers randomized 600 infants (age range, 2 months to 12 months) who presented to the emergency department with no prior history of wheezing and a clinical picture consistent with moderate-to-severe bronchiolitis to receive either a single dose of oral dexamethasone (1 mg/kg) or placebo. The primary outcome was hospitalization four hours after drug administration.

The admission rate was virtually identical in the steroid and placebo groups (39.7% and 41.0%, respectively). No differences emerged in subgroup analyses of infants who were positive for respiratory syncytial virus, those younger than 6 months, or those with a history of eczema or a family history of asthma. [Published in *J Watch Ped Adolesc Med*, July 25, 2007—Howard Bauchner, MD.] ■

Nahum Kovalski is an urgent care practitioner and assistant medical director/CIO at Terem Immediate Medical Care in Jerusalem, Israel.

Risk for Thromboembolism During Travel

Key point: Risk for thromboembolism on long plane rides is 1 in 6,000.

Citation: The WRIGHT Project Study Group. WHO Research Into Global Hazards of Air Travel (WRIGHT) Project, Final Report of Phase I. World Health Organization, 2007. Available at: http://www.who.int/cardiovascular_diseases/ wright_project/ phase1_report/en/index.html

The risk for venous thromboembolism approximately doubles after a plane flight lasting at least four hours but is still low, about 1 in 6,000.

This report, released online, is based largely on three epidemiologic studies and two pathophysiologic studies.

Among the findings:

- The risk also increases with other forms of travel—such as by car, bus, or train—where riders sit immobile for long periods.
- The risk remains elevated for two months after the trip.
- The risk is also increased by obesity, use of oral contraceptives, presence of the factor V Leiden mutation, and in patients taller than 6 feet 2 inches or shorter than 5 feet 2 inches. ■

Vocal Cord Dysfunction—An Overlooked Cause of Respiratory Symptoms

Key point: The condition is often mistaken for asthma.

Citation: Davis RS, Brugman SM, Larsen GL. Use of videography in the diagnosis of exercise-induced vocal cord dysfunction: A case report with video clips. *J Allergy Clin Immunol*. 2007;119:1329-1331.

Vocal cord dysfunction—a paradoxical adduction of the vocal cords during inspiration—is an occasionally overlooked cause of wheezing, stridor, or dyspnea. In this brief report, allergy and pulmonary specialists describe a 15-year-old girl who complained of "difficulty breathing and wheezing" during competitive swimming.

An extensive evaluation for asthma was negative, and empiric asthma therapy was ineffective. The patient's father videotaped her during and just after swimming and was able to capture obvious inspiratory stridor. Review of the father's video by the patient's physicians led to the correct diagnosis; the video can be viewed with the online version of the article (clip E3).

Physicians should be familiar with vocal cord dysfunction, an entity that is often mistaken for asthma. If a patient does not respond to conventional bronchodilator therapy and experiences respiratory difficulty mainly in inspiration rather than expiration, a diagnosis of vocal cord dysfunction, rather than asthma, should be considered. [Published in *J Watch Gen Med*, July 12, 2007—Allan S. Brett, MD.] ■

Surgery for Sciatica

Key point: Early symptom relief is the only real benefit of surgery; otherwise, surgery and conservative treatment yield equivalent outcomes at one year.

Citation: Peul WC, van Houwelingen HC, van den Hout WB, et al. Surgery versus prolonged conservative treatment for sciatica. *N Engl J Med*. 2007;356:2245-2256.

Surgery often is recommended for patients with sciatica who do not improve after receiving conservative treatment for six weeks. To compare two treatment strategies, Dutch researchers recruited patients who had severe sciatica pain six to 12 weeks after presenting to their general practitioners. Patients were referred for magnetic resonance imaging and evaluated by a neurologist, who confirmed that disk herniation was the cause of symptoms.

Finally, 283 patients were randomized to early (within two weeks) diskectomy or continued conservative treatment provided by their general practitioners, with surgery if needed for intractable pain. Research nurses were involved in pain management in the conservative-treatment group.

Early surgery provided quicker symptom relief (four vs. 12 weeks after randomization). In the early-surgery group, 3% of patients required a second procedure, and 1.5% had self-limiting complications. Forty percent of patients in the conservative-treatment group crossed over to surgery because of continued pain after a mean of 19 weeks. Outcomes did not differ between this group and the early-surgery group. At one year, there were no differences in symptoms or disability between the early-surgery and conservative-treatment groups.

An editorialist notes that patients with persistent sciatica have a reasonable choice between treatments that depends on aversion to surgical risk, severity of symptoms, and willingness to wait for resolution of symptoms.

That this large trial showed equivalent outcomes at one year with or without early surgery supports continued conservative treatment and referral to a primary care physician. Most sciatica pain improves within three months, and delaying surgery for a trial of nonsurgical care does not worsen outcome. [Published in *J Watch Emerg Med* July 13, 2007—J. Stephen Bohan, MD, MS, FACP, FACEP.] ■

Surgical Technique and Local Antibiotics for Ingrown Toenail

Key point: Partial nail avulsion with phenolization is superior to partial nail avulsion with matrix excision. Antibiotics do not appear to be necessary.

Citation: Bos AMC, van Tilburg MWA, van Sorge AA, et al. Randomized clinical trial of surgical technique and local antibiotics for ingrowing toenail. *Br J Surg*. 2007;94:292-296.

The aim of this study was to determine the most effective surgical treatment for ingrown toenail. The study authors randomized 117 patients into the following treatment groups: partial nail avulsion plus matrix plus antibiotics, partial nail avulsion plus matrix no antibiotics, partial nail avulsion plus phenol plus antibiotics, and partial nail avulsion plus phenol minus antibiotics.

All patients had partial nail avulsion. This was combined with excision of the matrix or application of phenol, with or without local application of gentamicin afterward. The measured endpoints were infection at one week and recurrence at one year.

Infection rates were unrelated to the use of antibiotics (P=.13). However, recurrence rates were lower after phenolization of the nail bed (eight of 58) compared with excision of the nail matrix (23 of 59) (P=.002).

Ingrown toenail (unguis incarnatus) is a common, sometimes disabling condition. This randomized trial suggested that partial nail avulsion with phenolization of the nail matrix is superior to partial nail avulsion with matrix excision. Antibiotics do not appear to be necessary. The one-year recurrence rate of 14% in the partial excision phenol-treated group demonstrated that there is still room for improvement in the management of this minor surgical condition. ■

Hiring an Employee

JOHN SHUFELDT, MD, JD, MBA, FACEP

Let's be honest, we have all done it: hired someone who, in retrospect, had only two brain cells, both of which turned out to be mutually inhibitory.

Have I told you about the time (many years ago) when I hired a provider who, on a busy day, locked himself in the bathroom and screamed, "If you don't get me some more help, I am going to start drinking?"

Since I was not sure what he could drink other than tap or toilet water, I was not concerned about him becoming intoxicated (for the internists in the audience, yes he could have become water intoxicated) during the shift. Had I taken the time to perform a background check on him I would have learned that he was a "troubled soul" who, years later, would be caught cooking meth in his garage.

There is wide variation in the diligence organizations use in their pre-hiring process. On one end of the spectrum there is an urgent care center whose screening criteria consists of measuring the BMI=IQ/4 ratio. An applicant's IQ had to be at least four times their Body Mass Index.

The other end of the spectrum was an urgent care that did in-depth personality profiles and background checks on all their prospective applicants. Somewhere between these two extremes lies an appropriate screening process.

I recently had an ex-employee's prospective employer call me about a reference. Unfortunately, the former employee had difficulty working with the nursing staff and she treated the patients as if they were a bother to her. I commended the person on inquiring about her history and was very honest about the employee's strengths and shortcomings.

Interestingly, one study showed that less than half of employers check on the references of their prospective employees. Some former employers will only discuss dates of employment, title, position, and possibly salary. Many employers are reluctant to say anything negative, due to concerns about libel or slander suits. However, even incomplete information is helpful inasmuch as you can compare it to what the applicant submits on their application.

The take-home point is to call a prospective employee's references as well as others who can speak to their competency and integrity.

A gap in a resume can be a harbinger of something untoward and should be questioned until the truth is ascertained, as it may be attributed to something as noble as time spent de-worming orphans in Somalia (*Legally Blond*) or, conversely, it could mean that the applicant had a job which ended badly or was interred for a stint at Betty Ford.

Either way, it is information that is helpful in the hiring process.

Avoid "Oops" Questions

It is also important to be aware of your own potential for missteps when conducting an interview.

Once, I was interviewing a woman to be our HR director. She was not very talkative and I was struggling to keep the conversation going so I asked her if she was planning on having children. She turned red and said, "Well, someday." After she left, our chief operating officer was nothing short of incredulous. She said, "What is wrong with you? You can't ask a woman if she is planning on having kids during an interview!" Who knew?

Federal and state laws protect people from being discriminated against on the basis of race, color, creed, sex, national origin, age, disability, pregnancy, and, in some states, marital status. Therefore, you must ensure that during an interview you do not imply that you have a preference for a certain "type of person."

You can ask if a person is able to perform the essential functions of the job with or without reasonable accommodations. If an accommodation is needed, you can ask what that accommodation consists of.

Also, during the interview, no remarks should be made about any protected characteristic (race, color, and creed) nor should hiring decisions be based upon what "kind of person" your staff or your patients want to associate with.

There are times when you may want to offer someone a job during the interview. I call these the "fog the mirror" or the "you

John Shufeldt is the founder of the Shufeldt Law Firm, as well as the chief executive officer of NextCare, Inc., and sits on the Editorial Board of *JUCM*. He may be contacted at *JJS@shufeldtlaw.com*.

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had me at hello" situations. This occurs when you are so desperate for someone to start that all they have to do is be able to fog a mirror to qualify for the job.

My only recommendation is, don't do it. Wait until their pre-employment screening is concluded. The screen typically includes drug screening, criminal background check, and previous employment verification. If you absolutely need to have someone start before all their information is back, have them sign a statement that they have been advised that the employer reserves the right to terminate based upon any negative findings or facts uncovered during the initial screening process.

It is important to treat the employee interview like a patient interview. For example, keep notes about what was discussed. Many prospective employees will make statements like, "I have no problem working Saturdays, Sundays, and holidays." These notes become important later when the employee tells you that secondary to their religious persuasion they cannot work weekends or holidays.

It is also important to keep notes documenting the reasons you did not hire an applicant. In other words, if they file an EEOC complaint against you, the interview notes become part of the equation and can illustrate why another, more qualified applicant was chosen.

Trust Your Gut

A few weeks ago, I called the pediatric attending on-call for the emergency department and said, "I have a 2-year-old FLK (funny looking kid) here. I have no clue what underlying genetic disorder this kid has, but something is clearly against God's plan."

We have all walked into patient's rooms and thought, "I have no idea what is wrong with you but I know something is." This is following your gut instinct. The same holds true during interviews. If something seems amiss, trust your gut. Don't hire them.

Finally, not everyone will have the same work ethic as your current "A" team. Hiring someone into the mix who does not have the same work ethic as the rest of your team will bring instant discord into your organization.

Although it is tongue in cheek, I tell prospective employees that the work ethic in our organization is, "If you don't show up for work on Saturday, don't bother coming in on Sunday." If the applicant starts hemming and hawing, I begin to worry about their ability to keep up with the rest of the team and will ask additional questions about their ability to multitask and digest large volumes of work.

The hiring process is a time- and labor-intensive undertaking, and rushing through the experience or tolerating shortcuts may, in the end, cost you exponentially more time and money than if you had done it correctly the first time. ■

CODING Q&A

Proper Coding for Removal of Foreign Bodies

DAVID STERN, MD, CPC

Q. Recently we removed a tampon that was retained for one week. What is the code for removing a foreign body from the vagina?

A. Although this procedure involves significant work, and the resultant foul odor can leave an exam room unusable for hours, the procedure is considered to be a part of the E/M. Of course, this is hard to understand, since there is a code for removing a foreign body from the external ear canal (69200) or the nares (30300). But coding is not always logical. One would hope that a code to compensate for the inconvenience and time spent on removing a vaginal foreign body will be developed. Until then, the procedure is not separately compensable under the CPT coding system.

Q. Recently, a woman presented with a fractured ring finger. The finger was quite swollen, and we had to cut off her ring with a ring cutter. What is the code for removing a ring from the finger?

A. Once again, cutting off a ring from a finger is considered to be a part of the evaluation and management (E/M) code. Of course, if you provide definitive treatment for the finger fracture, you should use the appropriate CPT code for treatment of the finger fracture, which will include 90 days of routine follow-up care.

These codes depend on documentation of whether the fracture was open (i.e., had an associated break in the skin) or closed and whether the fracture was or was not manipulated by the treating physician, so make sure that you have a separate and identifiable procedure note that documents these aspects of the treatment.

David Stern is a partner in Physicians Immediate Care, with nine urgent care centers in Illinois and Oklahoma, and chief executive officer of Practice Velocity (www.practicevelocity.com), a provider of charting, coding and billing software for urgent care. He may be contacted at *dstern@practicevelocity.com*.

If you refer the patient to another physician for the definitive treatment of the finger fracture, you can still code for the appropriate E/M level, the supply code for a finger splint (Q4049), and code for finger splint application (29130).

Q. What is the code for simply removing a splinter with a forceps?

A. With a few exceptions, if the removal requires no incision and if you simply remove the splinter with a forceps, then there is no specific CPT code for the splinter removal and the removal is included in the E/M code.

In the case of larger splinters, I have personally seen several abscesses complicate supposedly simple splinter removal procedures. These abscesses occurred because the initial foreign body removal left a small retained splinter fragment. Thus, it is good clinical practice—when possible without risk to deeper structures and especially with splinters from older wood—to make an incision and visualize the entire splinter prior to removal. This practice helps ensure that the entire splinter is removed and no splinter fragments are retained in the wound.

If the foreign body is located in the skin (epidermis and dermis) and has not penetrated the subcutaneous tissues, then the removal of a foreign body never warrants a procedure code separate from the E/M code.

Q. We had a patient step on a one-inch splinter and the doctor removed the splinter from the foot with a forceps. No incision was made. What code is appropriate?

A. Here is where coding gets a little tricky and knowledge of the fine print can allow for better reimbursement.

Unlike the generic code for simple foreign body removal from subcutaneous tissue (10120), the code for removing a foreign body from the subcutaneous tissue of the *foot* does *not specifically require incision* as part of the removal to use

the specific code for "removal of foreign body, foot; subcutaneous" (28190). Several other codes for foreign body removal from subcutaneous tissue also do not require the physician to perform an incision (**Table 1**). (Note: Although we are unaware of an official statement on this issue by CMS or the AMA, some payors and some coding authorities do consider an incision to be necessary to bill for these codes, so check with your payor.)

Q. We had a patient with a fish hook and barb in the palm of his hand. The doctor pushed the hook forward and advanced the barb through the skin. She then cut off the rest of the hook and then slid the hook out of the skin. How is this coded?

A. Some coders argue that since no incision was made, the hook removal is included in the E/M code. Others may hold that since the advancing of the hook made its own incision (howbeit less than 1 mm), one can use the code for subcutaneous foreign body removal with incision.

This may be a semantic distinction, as the so called "incision" is really just an iatrogenic puncture wound.

Prior to being aware of the coding implications, I generally made an incision in the skin to allow the tip of the advancing hook to slide though the skin. This technique makes the procedure simpler and less traumatic to the patient. In addition, the incision removes any controversy about whether the foreign body removal is compensable with the code 10120 (incision and removal of foreign body, simple).

Q. Several foreign body removal and incision and drainage codes distinguish between simple and complicated procedures. Does CPT or CMS give any guidelines to help the physician determine whether the procedure is simple or complicated?

A. To quote from *CPT Assistant* (December, 2006), "No. The choice of code is at the physician's discretion, based on the level of difficulty involved in the incision and drainage procedure." Of course, to help avoid disagreements with payors, the procedure note should always contain information to help support the physician's determination that the procedure was complicated.

Q. Our physician spent an hour exploring for a foreign body in a foot. I had to make an incision of about 4 cm to explore for the foreign body. May I add the code for the simple wound repair (12002) to the code for the complicated subcutaneous foreign body removal (10121)?

A. No. The wound repair would be considered to be included in the foreign body removal code. You may, however, use the code for deep foreign body removal from the foot (28192) or the code for complicated foreign body removal from the foot (28193) as appropriate (**Table 1**). Typically, these codes have significantly higher reimbursement than the code for a simple subcutaneous foreign body removal. ■

Table 1. Common Codes for Removal of Foreign Bodies

Location	Code	Description
Subcutaneous tissues	10120 10121	Incision and removal of foreign body, simple Incision and removal of foreign body, complicated
Muscle/tendon sheath	20520 20525	Removal of foreign body from muscle or from tendon sheath; simple Removal of foreign body from muscle or from tendon sheath; deep or complicated
Shoulder, subcutaneous	23330	Removal of foreign body, shoulder; subcutaneous
Upper arm or elbow, Subcutaneous Deep	 24200 24201	 Removal of foreign body, upper arm or elbow area; subcutaneous Removal of foreign body, upper arm or elbow area; deep (subfascial or intramuscular)
Wrist or forearm, Deep	25248	Exploration with removal of deep foreign body, forearm or wrist
Thigh or knee	27372	Removal of foreign body, deep, thigh region or knee area
Foot, Subcutaneous Deep	 28190 28192 28193	 Removal of foreign body, foot; subcutaneous Removal of foreign body, foot; deep Removal of foreign body, foot; complicated

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Effective Occupational Medicine Sales Through Effective Questioning

FRANK H. LEONE, MBA, MPH

A productive occupational medicine sales effort is predicated on your ability to identify a prospect's need and then to match that need with your services. Both require knowing when and how to ask the right questions.

Why is Questioning So Important?

Invariably, you begin your association with a prospect as"just another salesperson." You must set yourself apart from the start. Breaking the ice to pique interest is one area in which well-constructed questions can secure the participation and active interest of a prospect. For example, you *could* say, "Hello, I am from Tiptop Urgent Care and I would like to talk to you about our services," but you might elicit a more insightful response if you say, "Tiptop Urgent Care works with employers to lower unnecessary health and safety costs. Tell me a little about your most significant challenges in this area."

In two sentences, you have piqued interest ("Tell me more...) and elicited a need ("I'd like to lower our workers' compensation costs...").

Getting to the Heart of the Matter

After breaking the ice, the art of questioning continues to play a significant role throughout the sales call.

You should speak as little as 10% to 20% of the time and use most of that time asking relevant questions, probing (i.e., asking the prospect to expand on vague, yet critical, terms such as "quality" and "responsiveness"), and using questions to move your prospect through a logical sales process.

Frank Leone is president and CEO of RYAN Associates and executive director of the National Association of Occupational Health Professionals. Mr. Leone is the author of numerous sales and marketing texts and periodicals, and has considerable experience training medical professionals on sales and marketing techniques. E-mail him at *fleone@naohp.com*.

Interest

Always seek a prospect's "permission" to speak/meet and offer a "roadmap" regarding the objective and likely course of your contact. Seek permission to continue with the call by asking your prospect, "Is this a good time for you or would you prefer to schedule our call (meeting) at a more convenient time?"

This courtesy takes your prospect off the defensive. If you quantify the expected time allotment ("This should take no more than five minutes..."), you may be surprised how many more prospects are willing to speak with you.

Secondly, advise the prospect why you are calling and the planned course of the conversation. Securing the desired level of focus and interest from the respondent is dependent on their understanding of the reason for your call from the outset.

Credibility

Once you have engaged your prospect, you need to establish your clinic as a credible resource. Brief, fact-seeking questions provide useful insights about the prospect company while allowing you the opportunity to appear engaged and interested in what the prospect has to say. Effective questioning keeps objections to a minimum while you are building the case for your clinic.

Identifying Needs

As you dig deeper into a prospect's experience, policies, and strategies, you will be better positioned to identify needs. The need may be simple and easy to match with your services or may require broader, more innovative programs.

Commitment

Commitment means obtaining a prospect's buy-in to your proposed solutions. The typical salesperson presents the solution and waits for the "buy" signal. However, it is generally more effective to achieve commitment by asking questions. ■

Career Opportunities

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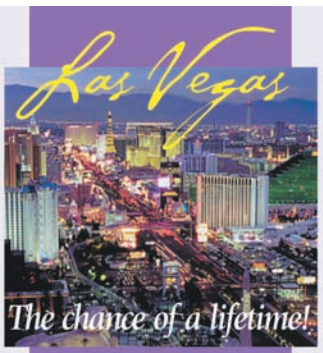

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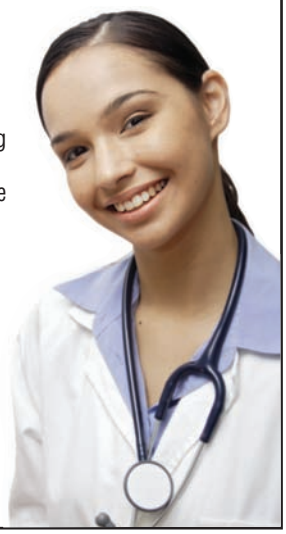

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Practices for Sale

FOR SALE- Urgent Care shares for sale. Has been open for 2 years. Carrollton, Texas. Call 469-222-3630.

FOR SALE- Orlando, Florida. Urgent Care/Family Practice conveniently located near Disney, Sea World, and Universal Studios. Well-established in prime international and domestic tourist corridor. Tremendous growth potential and consistent high income. Contact Dr. Daryanani at 407-465-1110 or email Ldaryanani@aol.com.

FOR SALE- Free standing Urgent/Family Practice center seeking physician to join practice and assume ownership. Owners are planning to retire after running successful practice for 22 years. Includes practice and 3,000–sq. ft. building/land. Troy, New York. Contact 518-421-7302.

Services

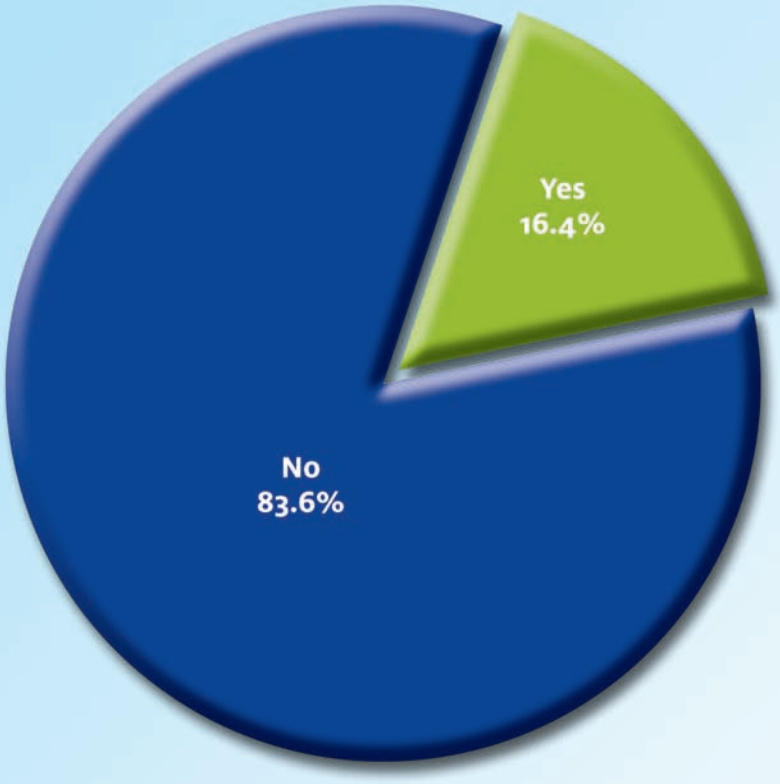
BUSINESS BROKER SERVICES. Own a busy, clinically excellent urgent care practice? Call for a free consultation from experienced urgent care business brokers. Contact Tony Lynch or Steve Mountain at MT Consulting, 610-527-8400 or tony@mtbizbrokers.com; www.mtbizbrokers.com.

DEVELOPING DATA

UCAOA's Survey Committee has conducted two annual member surveys, to date, designed to establish benchmarks in an industry for which data have been sorely lacking. In **Developing Data**, we will share one or two tidbits from the second annual survey and other sources in an effort to help readers get a sense of what their peers are doing, and what kind of trends are developing as urgent care evolves.

In this issue: Are payors reimbursing on problem-based coding?

PROBLEM-BASED CODING



Clearly, problem-based coding is an area in which much progress could be made. The number of respondents who are being reimbursed on problem-based coding is too small to yield statistically valid data; however, most of those few report the amount they are being reimbursed is less than 50% of receivables.

If your experience with problem-based coding leads you to a different conclusion, share your perspective with colleagues by sending an e-mail to us at *editor@jucm.com*. We'll publish all relevant responses in an upcoming issue and on our website, *www.jucm.com*.

Areas covered in the UCAOA industry surveys included urgent care structures and organization, services offered, management of facilities and operations, patients and staffing, and financial data. UCAOA members who have ideas for future surveys should e-mail J. Dale Key, UCAOA Survey Committee chair, at dkey@medachealth.com.

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Urgent Care:
A New Specialty Solves Old Problems

We invite you to take part in our conference which will take place on
Wednesday 7 November 2007
at the Jerusalem Regency Hotel (formerly the Hyatt Regency), Jerusalem, Israel

The conference will demonstrate to participants that an alternative to the ER exists, that it is no longer necessary to present to hospital and be exposed to resistant infections that exist there. There is now a solution!

Lectures include:

The Future of Urgent Care
Dr. Joe Djemal (CEO of TEREM Emergency Medical Centers)

Electronic Health Records
Dr. Nahum Kowalski (Assistant Medical Director and CIO, TEREM Emergency Medical Centers)

Urgent Care in the Community
Dr. Brendon Stewart-Freedman (Medical Director, South Jerusalem Branch, TEREM Emergency Medical Centers)

Teaching Advanced Pediatric Care to Community Physicians
Dr. Deena Zimmerman (Senior Pediatrician and Director of Research and Education, TEREM Emergency Medical Centers)

Pain Management in Emergency Settings
Dr. Itai Shavit (Head of Pediatric ER, Rambam Hospital, Haifa)

Anti-biotic Resistance in the Community
Dr. Effi Halperin (Head of Infectious Diseases Department, Bikur Holim Hospital Jerusalem)

ER and Hospital Overcrowding
Mr. Michael Dor (Director, Medicine Branch, Israeli Ministry of Health)

Panel Discussion
Moderator: Dr. Amnon Lahad (Head of the Academy of Family Medicine, Hadassah, Head of Family Medicine - Jerusalem, Clalit HMO)

Admission to the Conference: $40
Please note that the lectures will be given in Hebrew

To register or for further details please see our website at www.terem.com or contact Daniel Lipczer at dl@terem.com

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July 2007

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