



# On Forearm Fractures, Urethritis in Young Men, Out-of-hospital Cardiac Arrest, and Pharyngitis in Younger Patients

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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.

### Management of Forearm Fractures in Adults

*Key point: Primary care evaluation and management of forearm fracture in adults is presented.*

**Citation:** Black WS, Becker JA. Common forearm fractures in adults. *Am Fam Physician*. 2009;15;80(10):1096-1102.

Upper extremity fractures are often evaluated by primary care physicians at the patient's initial presentation or at follow-up after the initial presentation to urgent care or the emergency department.

These fractures account for approximately 2 million visits to the ED annually. Of these, 18% are for humeral fractures, 31% are for radial or ulnar fractures, and 51% are for carpal, metacarpal, or phalangeal fractures. Falls are the leading cause of upper extremity fractures.

The objectives of initial assessment of forearm fractures are to determine the mechanism of injury and extent of the fracture and to identify any additional injuries. A comprehensive history of the mechanism of injury, a thorough examination of the affected arm, and appropriate radiographic studies are all required.

To rule out the possibility of an open fracture, any skin breaks must be thoroughly examined. Neurovascular examination includes evaluation of radial and ulnar pulses and of

capillary refill. Hand and wrist sensory and motor examination are needed, particularly in the median nerve distribution because of its vulnerability in forearm trauma.

Standard radiographic assessment includes posteroanterior and lateral views of the affected arm, as well as oblique views if a fracture has not been definitively visualized or excluded. Initial radiography may fail to demonstrate small, occult, intra-articular fractures.

Although an anterior fat pad is normally seen at the elbow, an effusion will cause elevation of the fat pad (sail sign); a posterior fat pad is an abnormal finding that also suggests a fracture or other intra-articular process.

Repeat radiography in 10 to 14 days may be appropriate when there is high suspicion of a fracture. Magnetic resonance imaging may be helpful if immediate confirmation or exclusion of fracture is required, or to further elucidate possible joint instability or associated ligamentous injury.

Emergent referral is warranted for patients with open fractures, joint dislocation or instability, and/or findings suggesting neurovascular injury. Orthopedic consultation may also be required for fractures with significant displacement, comminution, or intra-articular involvement.

Barring these scenarios, however, clinicians can manage many forearm fractures using the protection, rest, ice, compression, and elevation (PRICE) protocol.

Initial treatment includes splinting and a sling to protect the injured arm and place it at rest; in addition, application of ice and elevating the affected limb can help reduce pain and swelling. In the acute setting, however, compression should be avoided because of possible complications from



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swelling, such as acute compartment syndrome.

Depending on the location and extent of injury, definitive treatment of forearm fractures may range from functional bracing to surgical repair and fixation. Early mobilization is usually recommended to avoid loss of mobility, which is the most common complication.

A short arm cast is appropriate for distal radius fractures (Colles fractures) with minimal displacement. Colles fractures, which account for up to 1/6 of all fractures treated, occur most often in young adults (usually from high-energy trauma) and in older persons (usually from a simple fall or other low-impact injury).

These fractures traditionally have been treated with closed manipulation and casting. However, it is now recognized that many of these fractures are unstable, and casting may not maintain acceptable reduction.

Additionally, advancements in surgical technique have improved fracture stability, allowing for earlier motion and rehabilitation.

For isolated ulnar fractures, a short arm cast or a functional forearm brace is indicated. Therapeutic options for Mason type 1 radial head fractures include a splint for five to seven days, or a sling as needed for comfort, combined with early range-of-motion exercises.

For an olecranon fracture in patients with a stable elbow and intact extensor mechanism, non-surgical treatment may suffice.

Specific key clinical recommendations for practice, and their accompanying level of evidence rating, are as follows:

- Risk for radiocarpal arthritis is increased with non-surgical treatment of displaced intra-articular fractures of the distal radius (level of evidence, C). Even minimal articular incongruence is associated with increased complications, according to expert opinion.
- Treatment with a functional brace or short arm cast is appropriate for isolated ulnar shaft fractures that are not displaced by more than 50% of the bone diameter and that are angulated less than 10° degrees (level of evidence, C). This recommendation is based on a systematic review of treatment methodologies, but evidence from randomized controlled trials is lacking.
- For the treatment of Mason type 1 radial head fractures, early mobilization is preferred, based on consistent evidence from several randomized, controlled trials (level of evidence, A).
- Casting appears to offer no benefit in the initial treatment of Mason type 1 radial head fractures (level of evidence, B), based on findings from a single randomized controlled trial.

Because non-surgical treatment of persons with intra-articular fractures increases the risk for complications, such as

radiocarpal arthritis, a referral should be strongly considered for any fracture that extends into the radiocarpal joint or the distal radioulnar joint. ■

### Urethritis in Young Men: More Questions Than Answers

**Key point:** *Known pathogens were identified in fewer than 20% of young men with urethral symptoms.*

**Citation:** Wetmore CM, Manhart LE, Golden MR. Idiopathic urethritis in young men in the United States: Prevalence and comparison to infections with known sexually transmitted pathogens. *J Adolesc Health.* 2009;45:463-472.

Urethritis, the most common syndrome affecting the male reproductive tract, is generally associated with sexually transmitted pathogens, but its epidemiology is not well described. To determine the prevalence of urethritis in young men, investigators analyzed data from 5,447 men (age range, 18-27; 77% white) who answered in-home questionnaires and underwent urine-based screening for sexually transmitted infections (STIs) as part of the National Longitudinal Study of Adolescent Health (Wave III).

On the day of the interview, 1.2% of men reported urethral symptoms in the past 24 hours (urethral discharge, 0.3%; dysuria or frequency, 1.0%; both symptoms, 0.2%), and 3.7% reported having symptoms in the past year.

Only 17.6% of those with current symptoms had known pathogens detected (*Neisseria gonorrhoeae*, *Chlamydia trachomatis*, *Trichomonas vaginalis*, and *Mycoplasma genitalium*).

Factors associated with significantly greater likelihood of testing positive for STIs were age ≤16 years at first vaginal intercourse (adjusted odds ratio, 1.81) and urethral symptoms in the past year (AOR, 3.61).

Factors associated with significantly *decreased* risk for a positive test were attendance in school and obtaining health-care in the past three months (AOR, 0.66 and 0.67, respectively).

Factors associated with significantly greater likelihood for idiopathic urethritis (no organism identified) were STI diagnosis in the past year (AOR, 9.29) and either zero or one to four partners (AOR, 7.24 and 7.51, respectively).

The finding that no pathogen was detected in most men who reported current urethral symptoms, even though highly sensitive nucleic acid amplification tests (NAATs) were used, is striking. The authors suggest misclassification of cases, low sensitivity of NAATs in a non-STI clinic population with a lower organism burden, and no testing for *Ureaplasma urealyticum* (another possible but uncommon pathogen) as possible explanations.

Furthermore, the epidemiologic pattern of idiopathic urethritis did not follow that of traditional STIs. *The Centers*

for Disease Control and Prevention 2006 STD Treatment Guidelines emphasize the importance of confirming that urethritis is present (discharge, white blood cells on Gram stain, or positive first-void urine leukocyte esterase test) before treating, and of testing for gonorrhea and chlamydia if urethritis is not confirmed.

The data from this study support the wisdom of this approach.

[Published in *J Watch Pediatr Adolesc Med*, December 23, 2009—Alain Joffe, MD, MPH, FAAP.] ■

### No Advantage Seen with IV Drugs at Out-of-Hospital Cardiac Arrest

**Key point:** Optimal resuscitation seems to corner on high-quality CPR (with minimal interruptions for anything, including drugs) and early defibrillation.

**Citation:** Olasveengen TM, Sunde K, Brunborg C, et al. Intravenous drug administration during out-of-hospital cardiac arrest: A randomized trial. *JAMA*. 2009;302:2222-2229.

A large randomized trial found that giving intravenous (IV) drugs like epinephrine and atropine in the setting of out-of-hospital cardiac arrest made it more likely that patients would be admitted to the hospital, but little difference in whether they survived to discharge.

That outcome was in spite of their undergoing resuscitation longer and receiving more defibrillations, and more often re-attaining a spontaneous circulation, compared with another group that didn't receive IV drugs during arrest.

The trial is only the latest of several in recent years to reappraise the efficacy of major elements of conventional cardiopulmonary resuscitation. While epinephrine administration has been part of the guidelines for resuscitation for many years, there has been very little evidence supporting its benefit and some convincing evidence suggesting worse outcomes with higher doses of epinephrine.

Table 1. Outcomes of Resuscitation in Out-of-Hospital Cardiac Arrest, with and without IV Drug Access

End point	IV drugs (%), n=418	No IV drugs (%), n=433	OR (95% CI)	p
Return of spontaneous circulation	40	25	1.99 (1.48-2.67)	0.001
Hospital admission	43	29	1.81 (1.36-2.40)	0.001
Survival to hospital discharge (this was the primary endpoint)	10.5	9.2	1.16 (0.74-1.82)	0.61

Nor was there a significant difference for the primary endpoint in an analysis that controlled for response time, whether the arrest occurred in a public place or was witnessed, or whether ventricular fibrillation was the initial rhythm.

The trial has a number of limitations, the group notes, including the inability to blind emergency responders to the randomization and the involvement of a single emergency-response system. It also doesn't preclude the potential usefulness of other IV drug regimens. ■

### Looking Beyond Group A β-hemolytic Streptococcus in Pharyngitis

**Key point:** *Fusobacterium necrophorum* causes endemic pharyngitis at a rate similar to that of group A β-hemolytic *Streptococcus*.

**Citation:** Centor RM. Expand the pharyngitis paradigm for adolescents and young adults. *Ann Intern Med*. 2009;151(11):812-815.

Current guidelines and review articles emphasize that clinicians should consider group A β-hemolytic *Streptococcus* in the diagnosis and management of patients with acute pharyngitis. Recent data suggest that in adolescents and young adults (15 to 24 years of age), *Fusobacterium necrophorum* causes endemic pharyngitis at a rate similar to that of group A β-hemolytic *Streptococcus*.

On the basis of published epidemiologic data, *F necrophorum* is estimated to cause Lemierre syndrome (a life-threatening suppurative complication) at a higher incidence than that at which group A *Streptococcus* causes acute rheumatic fever. Moreover, these estimates suggest greater morbidity and mortality from Lemierre syndrome.

The diagnostic paradigm for adolescent pharyngitis should, therefore, be expanded to consider *F necrophorum* in addition to group A *Streptococcus*.

Expanding the pharyngitis paradigm will have several important implications. Further epidemiologic research is needed on both *F necrophorum* pharyngitis (especially clinical presentation) and the Lemierre syndrome. Clinicians need reliable diagnostic techniques for *F necrophorum* pharyngitis.

In the meantime, adolescents and young adults who develop bacteremic symptoms should be treated aggressively with antibiotics for *F necrophorum* infection. Physicians should avoid macrolides if they choose to treat *Streptococcus*-negative pharyngitis empirically.

Finally, all clinicians who treat younger patients should know the red flags for adolescent and young adult pharyngitis (specifically, worsening symptoms or neck swelling—especially unilateral neck swelling). ■