

Bouncebacks

The Case of an 18-Year-Old Male with Hand Pain

Urgent message: A thorough history and physical exam are essential to positive outcomes and risk reduction when managing patients with hand injuries.

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Bouncebacks, in which we recount scenarios of actual patients who were evaluated in and discharged from an emergency department or urgent care facility and then “bounced back” for further treatment, appears semi-monthly in *JUCM*.

Case presentations on each patient, along with case-by-case risk management commentary by Gregory L. Henry, past president of The American College of Emergency Physicians (ACEP), and discussions by other nationally recognized experts are detailed in the book *Bouncebacks! Emergency Department Cases: ED returns* (2006, Anadem Publishing, www.anadem.com).

The focus of the *JUCM* series will be a two-step process designed to improve patient safety and reduction in legal risk in an urgent care practice:

Step 1

Identify high-risk patients—specifically, patients with the potential for serious medical illness masquerading

as a benign problem—or patients likely to be litigious. Examples include high-risk discharge diagnoses such as chest pain, fever and headache, abdominal pain, upset patients, patients who have issues with billing, a long wait, or unmet expectations, and patients who have bounced back.

Step 2

Review the chart *before* the patient leaves the urgent care clinic. Affirm consistent documentation between the nurse/tech and physician, address all documented complaints in H&P, confirm that the history is accurate, review potentially serious diagnoses, explore abnormal findings, write a progress note explaining the medical decision-making process (if unclear from the H&P), and assure that aftercare instructions are specific and that follow-up is timely and available.

This month's case highlights several patient care and risk management principles.

On the surface, it seems straightforward: An 18-year-old presents with a hand laceration which is repaired,



after which the patient is advised to follow up with a plastic surgeon.

However, a closer look reveals some serious inconsistencies and missed information—not seeing the forest for the trees, as it were.

This case brings the two-step approach into clear resolution. See how many “red flags” you can spot and if you would have done anything differently.

An 18-Year-Old Male with Right Hand Pain Initial Visit

(Note: The following is the actual documentation of the providers, including punctuation and spelling errors.)

CHIEF COMPLAINT (at 11:02): Right hand pain

Time	Temp	Pulse
11:12	96.6	66
Resp	Syst	Diast
16	110	68

HISTORY OF PRESENT ILLNESS (at 11:20): 18 year old male without a significant PMH presents with complaints that he was messing around with some friends the night before and they were close to a brick wall and a brick was loose and came down and landed on the dorsum of his right hand over the third MCP joint. The injury occurred 15 hours prior to the ED presentation. He complains of edema and redness and a laceration. Also c/o limited movement of the finger with pain with flexion and extension. No c/o fever, chills, night sweats. No allergies. Tetanus unknown.

PAST MEDICAL HISTORY/TRIAGE:

Medication, common allergies: None

PMH: None

PSH: None

EXAM (at 11:23):

General: Alert and oriented, no acute distress

Ext: 1 cm laceration over the third MCP joint on the dorsum and edema and erythema and swelling between the second and fourth metacarpal clear to the base of the metacarpals; even passive ROM of the third MCP causes pain with both flexion and extension

Skin: No red streaks

Neurovasc: Cap refill brisk. Sensation WNL

ORDERS/RESULTS (at 11:58): XR negative for fracture

PROGRESS NOTES (at 12:45): Anesthetized with

0.5% Marcaine, prep, drape, thorough irrigation with sterile saline and explored. The extensor tendon was intact, but the tendon sheath was frayed. Cleaned again with 10% betadine solution. Two loose 4-0 ethilon sutures were placed to the skin. Ancef 1 g IM and dT. Wound dressed with polysporin, adaptic and a volar OCL splint.

Diagnosis

Right hand laceration, 15 hours old, with cellulitis.

Disposition

The patient was discharged to home ambulatory at 13:37. Prescription for Keflex. Referral to a plastic surgeon to follow up in a couple of days and return to the ED with worsening symptoms or if unable to get in to see Plastic Surgeon.

Phone call to ED the next day: Patient called the next day (1 day after initial ED presentation) with complaints of swelling of the hand and fingers and pain. Has been taking Advil because he cannot afford Rx. Advised to return to the ED to be checked.

Discussion of Documentation and Risk Management Issues at Initial Visit

Error 1

Error: Failure to recognize a laceration over the MCP as a likely clenched fist injury (CFI)/“fight bite.” The patient provides a questionable mechanism for his injury (“a loose brick fell out of the wall”).

Intervention: Use open-ended questions to obtain a clear and accurate history. A patient may be hesitant to reveal he/she punched someone in the mouth; once the physician builds rapport, this information may be easier to discover, leading to improved patient care. Use friends and family, as well, to gather a more accurate history.

Teaching point: Don’t take the complaint at face value; if the history and exam don’t make sense, dig deeper.

Error 2

Error: Failure to consider tenosynovitis or deep fascial space infection of the hand. The patient states the injury occurred only 15 hours prior to presentation, and he had already developed erythema of the second through fourth metacarpals, with associated limited finger movement. The physician documented pain with passive flexion and extension of the third MCP,

and an associated frayed tendon sheath.

Intervention: The time frame presented suggests a rapidly progressing infection. Kanavel first described the four cardinal signs of flexor tenosynovitis in 1939: 1) pain on passive extension, 2) tenderness along the flexor tendon, 3) symmetric edema of the involved finger, and 4) flexed resting posture of finger. Early in the course, a patient may not exhibit all four signs; this patient initially had at least two.

Consideration of this condition in the differential will lead to more aggressive management and improved patient outcome.

Teaching point: The clinical picture suggests a deeper infection, given the time frame and physical exam findings. Hand infections are high risk and must be aggressively managed.

Error 3

Error: Primary closure of an infected wound. The patient's laceration and associated cellulitis with a frayed tendon was closed primarily, 15 hours after the injury.

Intervention: All CFIs should be left open, dressed, and splinted in position of function. CFIs have high rates of associated tenosynovitis (22%) and septic arthritis (12%). Subsequently, all CFIs or potential CFIs should be reevaluated in one to two days.

Teaching point: Don't perform primary closure on an infected wound (or CFI).

Error 4

Error: Failure to prescribe the appropriate antibiotic(s). A first-generation cephalosporin is adequate for cellulitis but not for infected CFIs.

Intervention: Most infected CFIs are polymicrobial, requiring both aerobic and anaerobic coverage. *Staphylococcus* and *Streptococcus* are still the two most common causes, but other bacteria, including *Eikenella*, may also be cultured. This patient was prescribed Keflex (cephalexin), inadequate coverage for oral flora; Augmentin (amoxicillin/clavulanic acid) would have been a better choice.

Teaching point: Choose an antibiotic appropriate for the specific type of wound.

Error 5

Error: Failure to address pertinent social issues. The patient called the ED the next day because he could not afford his antibiotics and was forced to return.

Intervention: A good patient disposition includes assurance that the patient can follow through with your

recommendations. An expensive (or even relatively inexpensive in this case) medication is useless if the patient doesn't have the resources to obtain the medicine. Make sure the patient has insurance or financial means to pay for the medicine; if not, explore other ways for treatment to occur.

Teaching point: Make sure the patient has the ability to obtain the medication in a timely manner.

An 18-Year-Old Male with Hand Pain

Return Visit—Five Days Later

Returned five days later with chief complaint of increased hand pain and drainage after his girlfriend kicked his wound. He had not filled his Keflex.

Temperature was 100.3 and he seemed "very uncomfortable," with a grimace on his face.

Had purulent drainage from the wound with extreme pain on range of motion (ROM) of the metacarpophalangeal (MCP) joint and pain along the tendon.

IV Unasyn (ampicillin and sulbactam) was administered and he was admitted to plastics with a tendon sheath infection vs. MCP septic arthritis.

Taken to the OR the next morning and he was found to have a large extensor tendon laceration with exposed joint and pus within the joint space.

Cultured *Eikenella* species and *Strep viridans*, suggesting human bite wound.

Summary of Case and Risk Management Principles

Patients presenting with hand injuries are common in urgent care medicine and are a potentially high-risk group. To ensure patient safety and minimize medical-legal exposure, the urgent care practitioner must obtain an accurate history and perform a thorough physical exam.

Our patient was initially diagnosed with an infected hand laceration; unfortunately, the potential for CFI and deep infection was not considered. His mechanism and physical exam findings were not consistent. Clues on the initial visit indicated that the patient had a potentially serious problem; it is unusual to develop a simple cellulitis within 15 hours of a finger laceration, and the provider noted tendon injury, with significant pain with range of motion.

Cephalexin was prescribed, which is problematic for a couple of reasons:

First, an infected fight bite is most often polymicrobial, requiring more broad-spectrum coverage, and amoxicillin/clavulanic acid (Augmentin) would be a more appropriate choice.

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Second, the patient never actually filled the prescription due to lack of financial resources. We must consider social issues when positioning patients; in the urgent care environment, we have only one chance to get it right!

Finally, wound care of this patient was inappropriate; an infected wound or CFI is best managed without primary closure, due to concern for potential infectious complications. The patient did return with a deep hand infection that required operative debridement. A quick review of the patient's chart before he left at the initial visit may have avoided this bounceback. ■

Suggested Readings

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