

Bouncebacks

The Case of a 46-Year-Old Man with Neck and Upper Back Pain

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 semimonthly 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, and discussions by other nationally recognized experts are detailed in the book *Bouncebacks! Emergency Department Cases: ED returns* (2006, Anadem Publishing, www.anadem.com).

Michael B. Weinstock, MD and Ryan Longstreth, MD, FACEP

This article is the second in a series that will sequentially answer the following questions:

What is the incidence of bouncebacks?

What is the incidence of bounceback admissions?

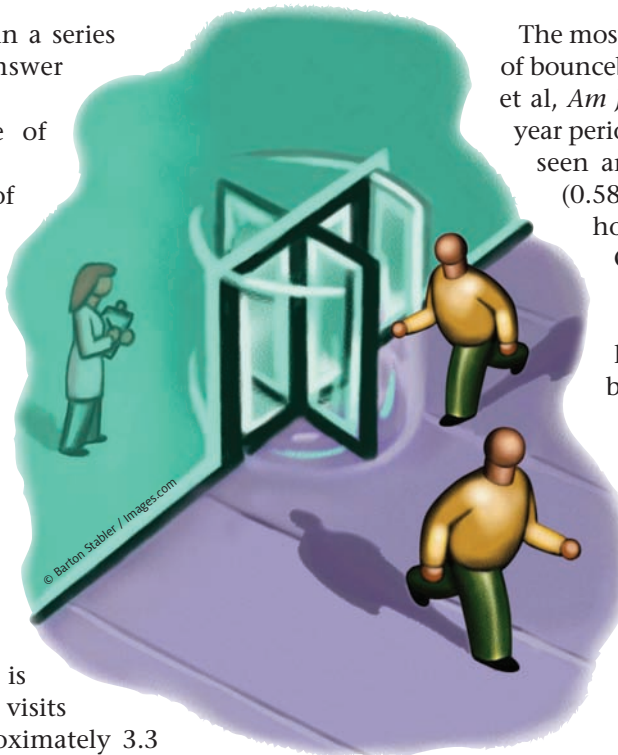
What is the incidence of deaths in patients recently discharged from the ED?

What percent of bouncebacks occur because of medical errors?

How can we use this information to improve patient safety?

In the September issue of *JUCM*, we discussed several studies which found the incidence of ED bouncebacks is 3%; of the 115 million ED visits per year in the U.S., approximately 3.3 million patients will “bounce back” to the ED within 72 hours.

This month, we turn our attention to Question II: What is the incidence of bounceback admissions?



The most comprehensive recent study of bounceback admissions (Martin-Gill, et al, *Am J Emerg Med*) spanned a two-year period with 104,584 new patients seen and discharged; 609 patients (0.58%) were admitted within 72 hours of their initial ED visit.

Other studies have reached similar conclusions.

Martin-Gill found the following groups more likely to be admitted on ED return:

- Age >65 (three times more likely to require admission than patients <30 years of age)

Patient with the following diagnoses:

- mental disorder
- GU system disorder/UTI and urinary calculus
- alcohol-related disorder
- abdominal pain
- chest pain

The direct answer to the question of bounceback admissions—0.6%—equates to roughly 660,000 patients per year.

Not all of these admissions occur because of medical errors, however. Patients are asked to return with worsening symptoms or if their illness does not respond to therapy, but many return because of an error made during the initial encounter.

How can we use this information to improve patient safety?

Martin-Gill reached the following conclusion: “By identifying high-risk patients prospectively, physicians will be better able to make informed decisions when considering the depth of evaluation, timing of discharge decisions, and extent of follow-up care.”

If we are able to recognize which patients are “high risk,” we can attempt a more thorough evaluation. We can spend extra time with documentation and explanation of the follow-up plan.

This issue’s case demonstrates these principles; the patient is a 46-year-old man who initially presented to his primary care physician with “neck and trapezius pain” and then presented to the ED later that day.

His symptoms did not improve and he presented to an urgent care clinic the next day, was sent home, and then presented to urgent care again the following day.

Within 24 hours he was back at the ED. His initial ED presentation (detailed below) seemed straightforward, but at the final ED visit, after his symptoms had progressed, the correct diagnosis was finally, astutely determined.

This patient was one of the 660,000 yearly bounce-back admissions. His outcome could have been very different if not for the quick thinking of the final physician.

A 46-Year-Old Man with Neck and Upper Back Pain Initial ED Visit

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

CHIEF COMPLAINT (at 23:28): Back pain

Time	Temp	Pulse	Resp	Syst	Diast	Pain
23:30	96.4	87	18	166	94	7-8
01:22	80	18	146	86		

HISTORY OF PRESENT ILLNESS (at 00:28): Pt has had left sided neck and trapezius pain for two days now. He thinks he slept on it “funny.” He has not had any direct trauma. No numbness, tingling, or weakness of the extremities. He saw his family doctor today who prescribed Skelaxin and Bextra for a muscle

spasm. He has taken these without any relief. No fever, wt. change, visual changes, cp, sob, edema, cough, n/v/d, abd. pain, urinary symptoms, HA, weakness, loc, rash.

PAST MEDICAL HISTORY/TRIAGE:

Medications: Bextra, Skelaxin, Percocet, Valium

Allergies: No known allergies.

PMH: None

PSH: Cholecystectomy, Tonsillectomy

Soc Hx: Tobacco use: (+), Alcohol use: (+)

EXAM (at 00:29):

General: Alert and oriented X3, well-nourished, well appearing, in no apparent distress

Head: Normocephalic; atraumatic.

Eyes: PERRL

Neck: Increased muscle spasm left trapezius region, no midline neck tenderness, no step off or crepitation. No ecchymosis or erythema.

Nose: The nose is normal in appearance without rhinorrhea

Resp: Normal chest excursion with respiration; breath sounds clear and equal bilaterally; no wheezes, rhonchi, or rales

Card: Regular rhythm, without murmurs, rub or gallop

Abd: Non-distended; non-tender, soft, without rigidity, rebound or guarding

Skin: Normal for age and race; warm and dry; no apparent lesions

ORDERS: C-spine series, Ibuprofen 600mg PO, Lortab 5mg PO to go, Valium 5mg PO to go

RESULTS: Cervical spine series, five views (final radiologist reading): Degenerative findings at C4-5 and C5-6. No acute osseous abnormalities are identified.

DIAGNOSIS (at 01:27): Acute Cervical/trapezius strain

DISPOSITION: The patient was discharged to Home ambulatory accompanied by self with prescriptions for Vicodin (12) and Valium (10). After care instructions for cervical strain. Follow up with PCP in 2 days. He was released from the ED at 01:45.

Discussion of Risk Management Principles

(Note: In previous JUCM articles, we have detailed mostly errors made during the initial ED evaluation.

In this case, however, the patient had a thorough and well-documented evaluation; we will discuss some of the finer points of the evaluation.)

Quality measure 1: Excellent history.

Discussion: This patient was high risk and a likely candidate to bounce back, as he had seen his PCP the same day as his ED visit. The history describes the location and duration of pain, and his response to medication. He has a (potential) mechanism, having slept on his left side in a “funny way,” so arriving at the diagnosis of cervical/trapezius strain seems reasonable.

Teaching point: The history is the most important part of the evaluation.

Quality measure 2: Excellent review of systems (ROS).

Discussion: Many of the potentially serious/life-threatening causes of neck/back pain are explored in the ROS. The provider explored the symptom of *fever* to evaluate for abscess, meningitis, and endocarditis. *Weight change* screens for cancer. *Visual changes* looks for aortic/carotid dissection. *Chest pain* and *shortness of breath* look for atypical presentations of acute coronary syndrome, pulmonary embolism, and pneumothorax. *Cough* screens for pneumonia. *Abdominal pain* looks for pancreatitis or other intrabdominal pathology. *Urinary symptoms* screen for pyelonephritis.

Teaching point: Your neighbor is usually correct about the etiology of back pain (i.e., back strain). In these seemingly straightforward cases, our job is to make sure something more serious is not occurring.

Quality measure 3: The physical exam supports the diagnosis.

Discussion: The physical exam includes a visual inspection of the skin (excluding zoster and cellulites/abscess) and finds pain in the anatomic region of the patient’s complaints

Teaching point: A good physical exam should support the patient’s diagnosis and exclude other serious diagnoses.

Quality measure 4: Good after-care instructions.

Discussion: Despite all symptoms and signs pointing to one diagnosis, occasionally there will be a rare illness masquerading as something common. The patient was given instructions for cervical strain, and advised to see his PCP in several days for follow-up. Documenting the after-care discussion in the chart is

vital when there is diagnostic uncertainty.

Teaching point: One of the most important risk management tools is to speak with the patient and his family before urgent care discharge to ensure understanding of the diagnosis and follow-up care.

A 46-Year-Old Man with Neck and Upper Back Pain ED Return Three Days Later

The patient was seen at an urgent care center two days ago and diagnosed with cervical muscle spasm and cervical arthritis and prescribed Percocet (acetaminophen and oxycodone).

He was seen again at urgent care yesterday and had a normal CXR and was diagnosed with a back strain and prescribed Valium (diazepam).

Final ED Visit

CHIEF COMPLAINT: Back pain

Time Temp Pulse Syst Diast

14:49 99.2 121 178 100

ED HISTORY DOCUMENTS: He denies any loss of function in his extremities, but his pain seems minimally worsened when he moves his arms, but he states that it is so intense there is little he can do to get into a comfortable position. He has never had any problems like this before. He denies any history of trauma. Physical exam is similar to exam from previous ED visit, but pt. seems to be in much more pain.

15:58: Initial orders for Dilaudid (hydromorphone) and Phenergan (promethazine).

16:48: His vital signs are rechecked and now temp is 103.2 degrees.

16:51: Labs ordered and showed WBC count 8.5, Hb 14.8 and all others including lytes, BUN/creat, cardiac enzymes were normal.

17:07: Progress note documents, “...the patient’s condition is worsening and he is now in excruciating pain of cervical, thoracic and lumbar spine. Also has developed left sided weakness. ED physician speaks with radiologist who does not feel there is an emergent indication for MRI of these areas. Multiple calls ensue from ED physician to neurologist twice, PCP, ID consultant, and neurosurgeon.” Eventually radiologist acquiesces to the MRI.

21:05: Radiology report (MRI cervical spine without and with contrast) reveals this to be a “very unusual case.” There appears to be compression of the cord between approximately C3 and C6 by a mixture of pathology, including degenerative change, possible disk protrusions, but also some inflammatory change (less likely

neoplastic change), which is resulting in fairly prominent epidural enhancement circumferentially in the canal and also is probably related to the prevertebral soft tissue swelling and enhancement that is present in the back of the pharynx from about C1 to C6.

22:15: Orders for clindamycin and Decadron (dexamethasone).

ED DIAGNOSIS:

Spinal cord compression and acute paravertebral soft-tissue infection versus abscess.

02:07: Pt. transferred to OR.

POSTOPERATIVE DIAGNOSIS: Cervical epidural abscess C3-6 with spinal cord compression, myelopathy, left hemiparesis. The patient was extubated in surgery and awoken moving all 4s.

He left the hospital in good condition with minimal residual left sided weakness.

FINAL DIAGNOSIS: Epidural compression syndrome.

Discussion of Risk Management Principles and Case

Who could have predicted the final diagnosis at the initial visit? Certainly not the initial PCP, ED doctor, or two urgent care doctors.

Luckily, on the patient's fifth visit in less than one week, he developed a fever and neurologic symptoms of spinal cord compression while in the ED, and the diagnosis was apparent.

This is the type of patient we see 20 times a week in the urgent care setting, and my guess is that all 20 are appropriately sent home with a prescription for an NSAID and pain control.

Sometimes, a patient presents with symptoms so general that it is impossible to make an accurate diagnosis (i.e., the initial symptom of nausea, with subsequent progression to a diagnosis of appendicitis). At that point, the patient needs to understand the doctor-patient relationship is a two-way street; if a definitive diagnosis is not able to be made during the initial encounter, the patient needs to understand serious diagnoses are still possible, and worsening symptoms require re-evaluation.

This discussion should be detailed in a progress note.

“The cornerstone of management is acute surgical intervention followed by IV antibiotics.”

Epidural compression syndrome can be caused by infection (as in our patient), hemorrhage, tumor, or massive midline disk herniation. Spinal epidural abscess is rare, occurring in 0.2 to 1.2 cases per 10,000 hospital admissions, but has been increasing since 1988 due to the increase in intravenous drug use and invasive spinal procedures.

A records review by Rigamonti, et al, found 75 patients diagnosed with spinal

epidural abscess from 1983 to 1992; 64% were male, with an average age of 50.7 years (range of 3 months to 83 years).

Comorbid conditions included intravenous drug use (33%), diabetes mellitus (27%), and prior spinal surgery (17%). Other predisposing factors include history of malignancy, obesity, HIV/AIDS, end-stage renal disease, urinary tract infection, cellulitis, endocarditis, dental abscess, pneumonia, and chronic steroid use.

The predominant organism found in spinal epidural abscess is *Staphylococcus aureus* seeded from hematogenous spread. Other organisms include *Streptococcus viridans*, *Streptococcus pyogenes*, and *Escherichia coli* and *Mycobacterium tuberculosis*. *Haemophilus parainfluenzae* and *Brucella* species have also been reported. Those who are immunocompromised are at risk of developing *Cryptococcus*, *Aspergillus*, or *Blastomyces*.

Distinguishing features on history and physical exam include back or neck pain, progressive neurologic deficit, and low-grade fever, but this “classic triad” is only present 37% of the time. Fever is present in 30% to 60% of cases. Less than 30% of patients have a motor deficit at initial presentation. Urinary retention with overflow incontinence has a sensitivity of 90% and specificity of 95%. Sciatica in one or both legs, weakness of the extremities, gait difficulty, or abnormal straight leg raise testing may be present.

The patient may have symptoms for weeks to months before the correct diagnosis is established; with our patient, symptoms were present less than a week. An epidural abscess is best visualized by MRI.

Prognosis is heavily dependent on comorbid conditions. Advanced patient age and degree of thecal sac compression are associated with poor outcome. Early

diagnosis and appropriate management (surgery and antibiotics) are associated with improved prognosis, although symptom duration is not a fool-proof predictor of outcome.

Neurologic deficits over 12 hours old are rarely recovered, and patients with paralysis over 36 hours have a mortality rate of approximately 14%.

The cornerstone of management is acute surgical intervention followed by IV antibiotics; however, some patients can be managed without surgery.

Distinguishing Urgent Care

What separates us from the “diagnose-o-meter” at Walmart? It is the ability to recognize red flags and serious disease. This ability helped to avoid a major neurologic catastrophe in our seemingly innocuous patient. ■

Suggested Readings

- Martin-Gill C, Reiser RC. Risk factors for 72-hour admission to the ED. *Am J Emerg Med.* 2004;22(6):448-453.
- Cote P, Cassidy JD, Carroll LJ, et al. The annual incidence and course of neck pain in the general population: A population-based cohort study. *Pain.* 2004;112:267-273.
- Della-Giustina D, Coppola M. Thoracic and lumbar pain syndromes. In: Tintinalli: *Emergency Medicine: A comprehensive study guide.* Sixth edition. McGraw Hill. New York. 2004:1777-1779.
- Quint DJ. Indications for emergent MRI of the central nervous system. *JAMA.* 2000;283(7):853.
- Baker AS, Ojemann RG, Swartz MN, et al. Spinal epidural abscess. *N Engl J Med.* 1975;293:463-468.
- Sampath P, Rigamonti D. Spinal epidural abscess: A review of epidemiology, diagnosis, and treatment. *J Spinal Disord.* 1999;12(2):89-93.
- Kaufman DM. Infectious agents in spinal epidural abscess. *Neurology.* 1980;30:844-850.
- Mackenzie AR, Laing RB, Smith CC, et al. Spinal epidural abscess: The importance of early diagnosis and treatment. *J Neurol Neurosurg and Psychiatry.* 1998;65:209-212.
- Rigamonti D, Liem L, Sampath P, et al. Spinal epidural abscess: Contemporary trends in etiology, evaluation, and management. *Surg Neurol.* 1999;52:189-197.
- Deyo RA, Rainville J, Kent El. What can the history and physical examination tell us about low back pain? *JAMA.* 1992;268:760-765.

An Empty Waiting Room Has Never Looked So Profitable.



When you partner with DocuTAP, an empty waiting room isn't a sign of decline – it's a sign of profit. Our integrated EMR and Practice Management solution decreases patient wait times and in-clinic time through innovative features like online patient registration. DocuTAP offers a financial model based on per-patient fees along with optional programs for software, hardware and implementation leasing, so we don't profit unless you do.

DocuTAP

Dedicated to Urgent Care.

1.877.697.4696

www.docutap.com • sales@docutap.com