

Hare Traction: Putting It On, Taking It Off

Femoral traction devices have been around for a long time. One reader has asked about the timing of removal of these devices after they arrive at the hospital. I learned a number of things while reviewing the literature to answer this question.

Most importantly, there is really **only one indication for applying a traction splint to the femur: an isolated, relatively mid-shaft femur fracture.**

Unfortunately, there are **lots of contraindications.** They consist of other injuries or fractures that could sustain further damage from traction. Specifically, these include:

- Pelvic or hip fracture
- Hip dislocation
- Knee injury
- Tib/fib, ankle or foot fracture

I did find one interesting study from 1999 that looked at how useful these splints really were. Of 4,513 EMS runs, only 16 had mid-thigh trauma and 5 of these appeared to have a femur fracture. Splint application was attempted in 3, and only 2 were successful. This was the experience in only one city (Evanston, IL) for one year. However, it mirrors what I see coming into

INSIDE THIS ISSUE

- 1 Hare Traction: Putting It On, Taking It Off
- 2 Trauma Care And HIPAA Demystified
- 2 Trauma Survival and Air vs Ground Transport
- 3 Violating Resuscitation Guidelines for Prehospital Traumatic Arrest
- 3 The Handoff: Opportunity For Improvement
- 4 Prehospital To Trauma Team Handoff: A Solution

TRAUMA CALENDAR OF EVENTS

AMERICAN ASSOCIATION FOR THE SURGERY OF TRAUMA

PLACE: GRAND HYATT KAUAI, KAUAI, HAWAII

DATE: SEPTEMBER 12-15, 2012

SOUTHWEST TRAUMA & ACUTE CARE SYMPOSIUM

PLACE: DESERT WILLOW CONFERENCE CENTERS, PHOENIX, AZ

DATE: NOVEMBER 1-2, 2012



Watch the video on Hare traction.

Snap the QR code, or type:

<http://youtu.be/qs6RciOHH4U>
into your browser address bar



our trauma center.

Unfortunately, when it comes to removal, there are very few guidelines out there. My advice is to **have your orthopedic surgeon evaluate as soon as imaging is complete.** They can help decide whether converting to some type of definitive traction is necessary, or whether it can be changed to a more conventional splint. In any case, **the objective is to minimize the total amount of time in the traction splint to avoid any further injury to other structures.**

Reference: Prehospital midthigh trauma and traction splint

use: recommendations for treatment protocols. *Am J Emerg Med*, 19:137-140, 2001.

Trauma Care And HIPAA Demystified

There is a lot of confusion and misinformation out there regarding HIPAA (Health Insurance Portability and Accountability Act). This law was enacted in 1996 with the intent of **protecting the health insurance benefits** of workers who lose or change their jobs, **providing standards for electronic health care transactions**, and **protecting a patient's sensitive health information**. This last part has caused much grief among trauma professionals.

It is commonplace for a trauma patient to require the services of many providers, from the initial prehospital crew, doctors and nurses at the initial hospital, yet another ambulance or aeromedical crew, professionals at a receiving trauma center, rehab or transitional care providers, and the patient's primary physician to name a few. Unfortunately, because there can be significant financial penalties for violating the HIPAA privacy guidelines, providers are more likely to err (incorrectly) on the side of denying information to others outside their own institution.

All of the people mentioned above are considered "covered entities" and must abide by the HIPAA Privacy Rule. This rule allows us to release protected information for treatment, payment and "health care operations" within certain limits. The first and last items are the key provisions for most trauma professionals.

Treatment includes provision, coordination and management of care, as well as consultations and **referrals** (such as transferring to a trauma center). Think of this as the *forward flow* of information about your patient that accompanies them during their travels.

Health care operations include administrative, financial, legal and **quality improvement activities**. These quality improvement activities depend on the *reverse flow* of information to professionals who have already taken care of the patient. They need this feedback to ensure they continue to provide the best care possible to everyone they touch.

Bottom line: Trauma professionals do not have to deny patient information to others if they follow the rules. Obviously, full information must be provided to EMS personnel and receiving physicians when a patient is transferred to a trauma center. But sending information the other way is also okay when used for performance improvement purposes. This includes providing feedback to prehospital providers, physicians, and nurses who were involved in the patient's care at every point before the transfer. The key is that the information must be limited and relevant to that specific encounter.

Feedback letters and forms, phone conversations and other types of communications for PI are fine! But stay away from email, which is not secure and is usually a violation of your institutional privacy policies.

Always consult your unit or hospital compliance personnel if you have specific questions about HIPAA compliance.

Reference: HIPAA Privacy Rule, <http://1.usa.gov/ReaTGo> (Warning! This will make your head spin!)

Trauma Survival and Air vs Ground Transport

Wartime experience has shown that rapid transport from the battlefield scene of injury to definitive care dramatically improves survival. This has been translated into civilian trauma care by making helicopter transport to a trauma center more widely available. But this resource is still somewhat limited and very expensive compared to ground EMS transport. Is this expense warranted, or in other words, **does it improve survival?**

Many have tried to answer this question. Several of these studies did show improved survival with air transport, but most had significant flaws that made their conclusions hard to interpret. The current issue of JAMA has published an article from MIEMSS and Johns Hopkins that tries to do it right.

The authors used the National Trauma Data Bank (1.8M records) and whittled it down to 223K by using pertinent exclusion criteria. About 25% were transported by air and 72% were taken to Level I centers (vs Level II). A sophisticated regression model was used to adjust for missing data and clustering by trauma centers.

They found that there is **roughly a 1.5% survival advantage in taking patients to trauma centers by air. About 65 patients need to be transported to a Level I center, or 69 patients to a Level II center, to save a life.** There are some issues with the statistics, primarily due to the nature of the NTDB data, but overall the paper is nicely done.

Bottom line: It looks like helicopter transport of seriously injured trauma patients conveys a very small survival advantage. However, this does not mean that everybody now needs to be flown in. This is not an ideal world, and not everybody is in an area that can provide such transport. Furthermore, in many areas ground EMS is still faster than air. And finally, air transport is much more expensive than the incremental survival increase may be worth. We will have to come to grips as a society to figure out what we can really afford.

Reference: Association between helicopter vs ground emergency medical services and survival for adults with major trauma. JAMA 307(15):1602-1610, April 18, 2012.

Violating Resuscitation Guidelines for Prehospital Traumatic Arrest

Eight years ago, the National Association of Emergency Medical Services Physicians (NAEMSP) and the American College of Surgeons Committee on Trauma (ACS-COT) released guidelines regarding withholding or terminating resuscitation in traumatic cardiopulmonary arrest (TCPA). Survival rates were extremely low (<2%) and were thought to have poor outcomes. But validation of the guidelines has been challenging, and some even doubted that EMS personnel could accurately assess these patients in the field!!

Researchers at Mt. Sinai Hospital in Chicago performed a large retrospective study of all patients in TCPA brought to their hospital by the Chicago Fire Department over a 7.5 year period. These patients met exclusion criteria but had been resuscitated anyway. Their series was relatively large (294 patients), and looked not only at the ultimate outcome, but also at EMS performance and cost.

They found that field assessments by EMS were very

accurate and consistent. Violation of the guidelines resulted in only 6 survivors, and they all were resuscitated to a neurologically devastated state (4 brain dead, 1 family withdrew support, 1 sent to TCU with long-term GCS 6). No loss of neurologically intact survivors would have occurred if the guidelines were followed. Finally, the cost of trying to resuscitate these patients was \$385,000 per year.

Bottom line: EMS can and should apply the NAEMSP/ACS-COT criteria for traumatic cardiopulmonary arrest and withhold resuscitation for these patients. Tragically, it is an expensive waste of time to try to bring them back.

To review the NAEMSP guidelines, use this QR code or type this address in your browser:
<http://www.naemsp.org/documents/guideterminate.pdf>



Reference: The consequences of violating current guidelines regarding resuscitation of patients in prehospital traumatic arrest. Presented at the 34th annual Residents Trauma Paper Competition at the 89th Annual Meeting of the ACS Committee on Trauma, March 10, 2011.

The Handoff: Opportunity For Improvement

Handoffs occur in trauma care all the time. **EMS** hands the patient off to the trauma team. **ED physicians** hand off to each other at end of shift. They also hand off patients to the inpatient trauma service. **Residents** on the trauma service hand off to other residents at the end of their call shift. **Attending surgeons** hand off to each other as they change service or a call night ends. The same process also occurs with many of the other disciplines involved in patient care as well.

Every one of these handoffs is a potential problem. Our business is incredibly complicated, and given that dozens of details on dozens of patients need to be passed on, the opportunity for error is always present. And the fact that resident work hours are becoming more and more limited increases the need for handoffs and the number of potential errors.

Let's look at information transfer at the first handoff point, EMS to trauma team. Some literature has suggested that there are 16 specific prehospital data points that affect patient outcome and must be included in the EMS report. How good are we at making sure this happens?

An observational study was carried out at a US Level I trauma center with video recording capabilities in the resuscitation room. Video was reviewed to document the "transmission" part of the EMS report. Trauma chart documentation was also reviewed to see if the "reception" half of the process by the trauma team occurred as well.

A total of 96 handoffs were reviewed over a one year period. The maximum number of elements in the study was 1536 (96 patients x 16 data elements). The total number "transmitted" was 473, but only 329 of those were "received." This is not quite as bad as it seems, since 483 points were judged as not applicable by the reviewers. However, this left 580 that were applicable but were not mentioned by EMS. Of the 16 key elements, the median number transmitted was 5, with a range of 1-9.

This sounds bad. However, the EMS professionals and the physicians have somewhat different objectives. EMS desperately wants to share what they know about the scene and the patient. The trauma team wants to start the evaluation process using their own eyes and hands. What to do?

Bottom line: EMS to trauma team handoffs are a problem for many hospitals. EMS has a lot of valuable information, and the trauma team wants to keep the patient alive. They are both immersed in their own world, working to do what they think is best for the patient. Unfortunately, they could do better if they just worked together a bit more.

Reference: Information loss in emergency medical services handover of trauma patients. Prehosp Emerg Care 13:280-285, 2009.

Prehospital To Trauma Team Handoff: A Solution

Here's a proposed solution to the problem presented in the previous article. Let's learn from our experience in the OR. Best practice in the operating room mandates a **specific time out process** that involves everyone in the

OR. Each participant in the operation has to stop, identify the patient, state what the proposed procedure and location is, verify that the site is marked properly, and that they have carried out their own specific responsibilities (e.g. infused the antibiotic).

Some trauma centers have initiated a similar process for their trauma team as well. Here's how it works:

- The patient is rolled into the resuscitation room by EMS personnel, but remains on the stretcher.
- Any urgent cares continue, such as ventilation.
- The trauma team leader is identified and the EMS lead gives a brief report while **everyone in the room listens**. The report consists of only mechanism, all identified injuries, vital signs (including pupils and GCS), any treatments provided. **This should take no more than 30 seconds.**
- An opportunity for questions to be asked and answered is presented
- The patient is moved onto the hospital bed and evaluation and treatment proceed as usual.
- EMS personnel provide any additional information to the scribe, and may be available to answer any additional questions for a brief period of time.

Bottom line: This is an excellent way to improve the relationship between prehospital and trauma team while improving patient care. It should help increase the amount of clinically relevant information exchanged between care providers. Obviously, there will be certain cases where such a clean process is not possible (e.g. CPR in progress). I recommend that all trauma programs consider implementing this "Trauma Activation Time Out For EMS" concept.



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