

PEDIATRIC TRAUMA UPDATE

Volume 1, Issue 3
May 2008



THANK YOU NURSES!



From the ER to the OR through the ICU and to the floor, nurse's are the heart, hands, and minds of great trauma care. Without their knowledge and care we would not have such exceptional outcomes.



Pediatric trauma patients roll, walk or are carried through the doors of The University of Iowa Children's Hospital every day.

Although unexpected and stressful, the nurses calm worried families while managing the care of the injured child. By doing so they ensure the best outcome in the most timely and efficient manner. Thank You!

As nurses you are always curious about how to im-



prove your practice or answer questions regarding, "Why did we do that?" or "How can we improve?" Here are some great resources available through the University of

Iowa Emergency Medical Services Learning Resource Center (EMSLRC).

- Trauma Nursing Core Course
- Advanced Trauma Care for Nurses Program
- Emergency Nursing Pediatric Course
- Pediatric Advanced Life Support.

Please view any of these course brochures at www.uihealthcare.com/depts/



emslrc.

These classes are a great way to improve your own knowledge and the care you provide patients each day!

365 days a year, University of Iowa Children's Hospital nurses combine their vast knowledge of today's complex technologies with the gentle touch of compassionate care to make the best possible care available to patients and their families.

For all your time, energy, and knowledge we say "Thank You."



Pediatric Trauma Cases April 2008

Number of admissions	23
Number of ER Visits	25
Mean Injury Severity Score	24
Number of Trauma Alerts	6
Number of Trauma Activations	2

Special points of interest:

- May 6th—12th is National Nurses Week.
- Pediatric Trauma Meeting will be held on May 6th @ 07 in the Trauma Conference Room. See you there!!
- SafeKids Coalition Child Safety Seat Check June 7th 09-12 @ Mercer Park in Iowa City.
- Questions or concerns related to Pediatric Trauma Care? Contact Kristel Wetjen @ 6-8851 or page 5239 kristel-wetjen@uiowa.edu

Liver Injuries...How Long to Sit?

A recent trauma alert read @ 1816: "Peds Alert. 5 y/o male. Fall 15-30 feet. ETA 8 minutes. VS Stable. Lethargic. Room 1 Thanks!



the trauma bay where the primary and secondary surveys are completed. Deeming that the patient is stable he is taken to the CT scanner. There he has his head and abdomen

scanned. Radiology calls and tells you that this patient has a Grade IV liver laceration. Now what?

Research shows that if a pediatric patient is hemodynamically stable observation is appropriate. Observation

The patient is brought into

Management of Liver Injuries Cont.

of an isolated liver injury requires serial hematocrits and hemoglobins as well as abdominal exams. If the patient has a drop in H/H or a worsening abdominal exam, it is time for the OR, but what if they remain stable?



How long does a child have to remain on strict bed rest to be reasonably sure that the liver will not start to bleed again?

The American Pediatric Surgical Association (APSA) sought to answer that very question. First, they retrospectively studied 832 children and based on that analysis developed guidelines for nonoperative monitoring. Next, they applied those guidelines to 312 children prospectively and found that

only 1.3% of patients required a trip to the OR and only 5.1% needed a transfusion.



The guidelines for isolated liver/spleen injuries are shown in the table below:

	CT Grade of Laceration			
	I	II	III	IV
ICU Stay (d)	None	None	None	1
Hospital Stay (d) - (strict bed rest during this time)	2	3	4	5
Predischarge Imaging	None	None	None	None
Postdischarge Imaging	None	None	None	None
Activity Restriction (wk)*	3	4	5	6

*Return to full-contact, competitive sports (ie, football, wrestling, hockey, lacrosse, mountain climbing) should be at the discretion of the individual pediatric surgeon. The proposed guidelines for return to unrestricted activity include "normal" age-appropriate activities.

References

Stylianos S, and the APSA Trauma Committee; Evidence-based guidelines for resource utilization in children with isolated spleen or liver injury. *J Pediatric Surgery* 35:164-169, 2000.

Stylainos S. and the APSA Trauma Committee: Compliance with Evidence-Based Guidelines in Children With Isolated Spleen or Liver Injury: A Prospective Study. *J Pediatric Surgery* 37: 453-456, 2002.

GRADING OF LIVER INJURIES



You may ask yourself, what does the grade of injury have to do with anything? Well as you can tell from the previous column, the injury grade allows the practitioners to decide treatment. So, how is an organ "graded"?

The Organ Injury Scaling was developed by the Organ Injury Scaling Committee of the American Association for the Surgery of Trauma. Originally convened in 1987, these scoring systems are modified and updated as deemed appropriate.

The scale is graded 1–6 for each organ, 1 being least severe and 5 the most severe injury from which the patient may survive. Grade 6 injuries are by definition not usually salvageable.



Grade I

- Hematoma—Subcapsular, <10% surface area
- Laceration—Capsular tear, <1cm parenchymal depth

Grade II

- Hematoma—Subcapsular, 10-50% surface area. Intraparenchymal, <10cm diameter
- Laceration—1-3cm parenchymal depth, <10cm length

Grade III

- Hematoma—Subcapsular, >50% surface area or expanding. Ruptured subcapsular or parenchymal hematoma. Intraparenchymal hematoma >10cm or expanding
- Laceration—>3cm parenchymal depth

Grade IV

- Laceration—Parenchymal disruption involving 25-75% of hepatic lobe or 1-3 Couinaud's segments in a single lobe.

Grade V

- Laceration—Parenchymal disruption involving >75% of hepatic lobe or >3 Couinaud's segments within a single lobe
- Vascular—Juxtahepatic venous injuries ie. Retrohepatic vena cava/ central major hepatic veins

Grade VI

- Hepatic Avulsion

