Use of Expert Witnesses in Child Physical and Sexual Abuse Cases

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State Experts in Physical Abuse Cases

What happened to this child

How did this happen to this child

Is there anything else that could have caused this type of injury

Metabolic cause? Can you test for it?

Has this child been tested?

State Experts in AHT Cases

Biomechanics of injury

Timing of injury

Totality of the injuries to this child

Only one cause fits all injuries

Could there be a metabolic reason

Was this child tested

Defense Expert Analysis

Go over the defense report

Consult with your expert

Devise a strategy for dealing with the defense

Some Defense "Expert Medical Witnesses"

Now, how do you as the prosecutor demonstrate this to the jury?

What to Expect From Defense Medical Witnesses

- **Most often, will offer *reasonable* alternative explanations**
- **Express opinions that other things are "possible"**
- **Cover one finding, but not all**
- **Attempt to confuse – especially as to the timing or cause of injuries**

What to Expect From Defense Medical Witnesses

- Criticize prosecution experts for
  - Failure to perform critical testing
  - Rushing to judgment, based on "dogma"
  - Not considering other things that should be in the differential diagnosis
  - Lack of "evidence based" scientific opinions

What to Expect From Defense Medical Witnesses

- Most will concede that injuries *could be* from abuse – those who don't are very vulnerable
- Divide and conquer – deal with findings as though each happened in isolation, not together

What to Expect From Defense Medical Witnesses

- Often make grandiose statements of what the literature concludes (i.e. biomechanics) but if pressed will have a hard time supporting the opinions
- More often than not, they are not child abuse pediatricians or regularly work with children in their medical practice
- Without an eyewitness, no one knows the exact mechanism of injury (true, but we don't have to prove that)

Your First Step

- **Make sure the defense expert isn't right….**
- **Maybe the experts you've consulted missed something?**
- **Is the defense expert a well-respected member of the field of child maltreatment?**
- **Talk to them – find out what they say was missed or how the experts you're dealing with made mistakes**
- **Remember that you don't want experts who just tell you what they think you want to hear**
- **Is it an intimidation tactic?**

Commonly Seen Defenses in Cases involving Child Sexual Abuse

My client NEVER touched her. If he did, there would be injury.

Genital Anatomy in Pregnant Adolescents

- Defense attorneys expect that a history of penile-vaginal penetration will be associated with exam findings of penetrating trauma
- Retrospectively analyzed 36 adolescents, ages 12.3-17.8 years, who were pregnant when examined for child sexual abuse evaluation
- Reviewers blinded to medical history other than pregnancy
- 2/36 had findings diagnostic of penetrating trauma
- 34 had no specific genital findings to indicate prior vaginal penetration

Kellog, N., et al. Genital anatomy in pregnant adolescents: "normal" does not mean "nothing happened". Pediatrics 2004; 113(1):e67-69.

Reasons for Normal Exams

- No vaginal penetration
  - "Intracrural" intercourse is recognized in the medical literature
  - This is still penetration of the vulva
- Injuries heal quickly/delayed disclosure
- Injuries obscured by adolescence
- Adolescent hymen stretches

"Hymen is intact"

The hymen is very elastic

- "The perpetrator may perform labial intercourse or fellatio without resulting trauma to the internal genitalia."

Johnson, "Sexual Abuse in Children", Pediatrics in Review, 2006; 27: 17 – 27.

Examination Findings In Confirmed Child Sexual Abuse

"IT'S NORMAL TO BE NORMAL."

Study evaluated examination findings in legally confirmed cases of child sexual abuse

- 28% had normal exams
- 49% had nonspecific exams
- 9% had suspicious exams
- 14% had abnormal exams

***Only 1% of patients had abnormal anal findings**

Adams, J. et al. Examination findings in legally confirmed child sexual abuse: It's normal to be normal. *Pediatrics* 1994; 94(3):310-17.

Exam findings in Legally confirmed child sexual abuse: "It's normal to be normal"

- Adams JA et al. *Pediatrics* 1994;94:310-317
- 236 children with perpetrator conviction for SA
- 8 months to 17 11/12 yrs. (mean age 9)
- Abnormal genital 14% (clear evidence 9% + suggestive 5%)
- Abnormal anal 1% (anal laceration)
- Time since last incident & history of blood significantly correlated with + findings

- "Most children are not abused in a way to leave permanent physical findings. Children are usually abused by an individual known to them who wants continued access to them. Any violent penetrating assault on a preadolescent child will likely result in significant trauma and discovery".
- Heger et al, "Children Referred for Possible Sexual Abuse: Medical Findings in 2384 Children, Child Abuse & Neglect 26 (2002) 645 – 659.

- "There is a need here to consider what the vagina is to a prepubertal child. She has no frame of reference to understand that penetration between the labia is not the same as vaginal penetration."
- Pillai, "Genital Findings in Prepubertal Girls: What Can Be Concluded from an Examination?, J Pediatr Adolesc Gynecol (2008) 21:177-185.

Commonly Seen Defenses in Cases involving Child Sexual Abuse

My client NEVER touched her. He has a sexually transmitted infection and she doesn't or vice versa.

Reasons for Normal Exams

- Transmission rate is nowhere near 100%
- Some STDs (e.g., chlamydia) can be easily and quickly cured
- Incubation period may not have run its course
- False positive/negative tests

Factors Influencing Likelihood That Sexually Victimized Child Will Acquire an STI

- Regional prevalence of STI in adult population
- Number of assailants
- Type and frequency of physical contact between the perpetrator(s) and child
- Infectivity of various microorganisms
- Child's susceptibility to the infection
- Whether child has received intercurrent antimicrobial treatment
- Time interval between contact and evaluation

Sexually Transmitted Infections in Adolescents and Adults. Red Book: 2012 Report of the Committee on Infectious Diseases. American Academy of Pediatrics. 2012. Pp. 181.

Not all doctors are equal – not even pediatricians & Ob/Gyns

- One can tell how many times a female has had sex – vagina becomes "a well-worn trail"
- Purpose of labia: Prevents urine from splashing against toilet
- Victim has no hymen (actually was imperforate)
- At age 45, the vagina becomes "pretty much useless"

Commonly Seen Defenses in Cases Involving Bruising

- "Come on Doctor, kids just bruise themselves. My client didn't do that. It was an accident."
- "This child fell. My client didn't do that."

Those That Don't Cruise Don't Bruise

Sentinel Injuries in Infants

ARTICLE

Sentinel Injuries in Infants Evaluated for Child Physical Abuse

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KEY WORDS
abuse, bruising, infants, maltreatment, screening, abusive head trauma

WHAT'S KNOWN ON THIS SUBJECT: Although it is known that relatively minor abusive injuries sometimes precede more severe physical abuse, the prevalence of these previous injuries in infants evaluated for abuse was not known.

WHAT THIS STUDY ADDS: A history of bruising or oral injury in a precruising infant evaluated for abuse should heighten the level of suspicion because these injuries are common in abused infants and rare in infants found not to be abused.

Sentinel Injuries in Infants

Sheets, et al. Pediatrics 131(4) 2013

- Relatively minor abusive injuries can precede serious physical abuse in infants
- Determined how often abused infants had a previous history of sentinel injuries when compared with infants who were not abused
- Sentinel injury defined a previous injury reported in the medical history that was suspicious for abuse because the infant could not cruise or the explanation was implausible

Sentinel Injuries in Infants

Sheets, et al. Pediatrics 131(4) 2013

- Case-control, retrospective study of 401 <12 month-old infants evaluated for physical abuse in a hospital based setting
- Of 200 definitely abused infants, 27.5% (n=55) had a previous sentinel injury
- None of the nonabused group had sentinel injuries

Sentinel Injuries in Infants

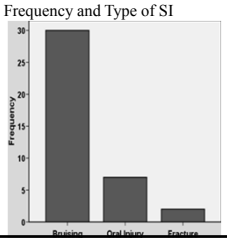
Sheets, et al. Pediatrics 131(4) 2013

- Type of sentinel injury in the definitely abused cohort
  - Bruising (80%)
  - Intraoral injury (11%)
  - Other injury-fracture (7%)

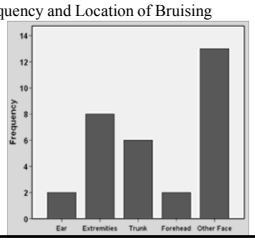
Sentinel Injuries in Infants

- Most sentinel injuries were bruises on the non-forehead face, trunk and extremities. *Bruising and oral injuries are significant at p= <0.001 using a one sample binomial exact test.

Frequency and Type of SI



Frequency and Location of Bruising

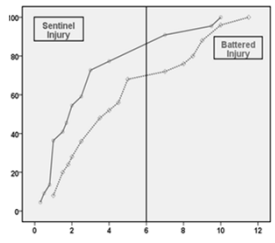


Sentinel Injuries in Infants

Sheets, et al. Pediatrics 131(4) 2013

- Sentinel injuries occurred in early infancy: 66% at 3 months of age and 95% at or before the age of 7 months.
- Medical providers were reportedly aware of the sentinel injury in 41.9% of cases.
  - * Of these, 56% of the medical providers were not concerned about abuse

Sentinel Injuries in Battered Infants



- Mean time interval between SI and battering injury ≈ 1.6 mo.
- 25% of battered infants had SIs
- Mean age at time of SI ≈ 3.2 mo.
- Proportion of SIs occurring
  - at or before 7 mo. = 91%
  - at or before 4 mo. = 77%
  - at or before 2 mo. = 54%

Sheets & Koszewski (Presented Helfer 4/18/2010- Philadelphia)

Ask about prior bruises or blood coming from the mouth

Recognition of sentinel injuries and appropriate intervention can prevent abuse

Sentinel Injuries and Age at Risk

TABLE 1 Putative Sentinel Injuries

Candidate Injuries	Age at Risk, mo	ICD-9-CM Codes	Source
Bruising	<6	920–924	Harper et al[27]; Sugar et al[26]
Burns	<6	940–949	DeGraw et al[30]; Hicks and Stolfi[57]
Oropharyngeal injury	<6	873.6–873.7	Thackeray[22]; Maguire[58]
Femur/humerus fracture	<12	812, 820–821	Leventhal et al[25]; Schert[59]; Strait[60]
Radius/ulna/tibia/fibula fracture	<12	813, 823, 824	Leventhal et al[25]; John[61]
Isolated skull fracture	<12	800–804*	Deye et al[62]; Wood[63]; Laskey[43]
Intracranial hemorrhage	<12	800–801, 803–804, 851–853*	Wood[17]; Trokel[18]; Kemp[64]
Rib fracture(s)	<24	807.0, 807.1, 807.4	Rubin et al[12]; Maguire[65]
Abdominal trauma	<24	863–869	Lindberg et al[8,46]; Trokel[28]
Genital injury	<24	922.4, 878	Carpenter[47]
Subconjunctival hemorrhage	<24	372.72	Sheets et al[24]; DeRidder[48]

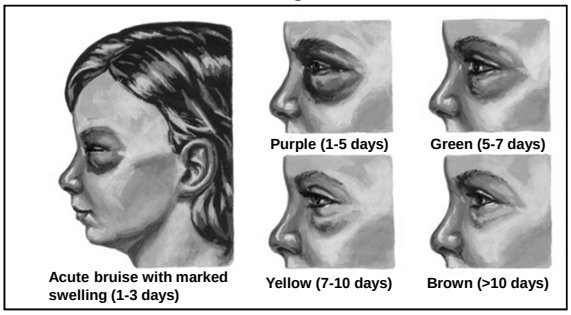
* ICD-9 codes that signify skull fracture with intracranial hemorrhage (eg, 804.2) were included in the group with intracranial hemorrhage, not with subjects who have isolated skull fractures.

Vertical Linear Buttock Bruises

- Unique pattern indicates severe forces
- Represents crimping or shearing injury

Feldman KW. Patterned abusive bruises of the buttocks and pinnae. *Pediatrics*. 1992;90:633-636

Dating Bruises
"The Dogma"



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Dating Bruises
The Literature

- Estimation of the Age of Bruising" *Archives of Diseases of Children, 1996*
- "Dating of Bruises in Children: An Assessment of Physician Accuracy" *Pediatrics, 2003*
  - Direct exam by physicians
  - Poor accuracy with dating
  - Poor interrater reliability

Commonly Seen Defenses involving *Child Torture*

He was bad. We disciplined him with corporal punishment. That is our God Given right!

Medical or Forensic Interview Child Torture Disclosures

- Rules of the home
  - toilet
  - food
  - sleep
- Bizarre forms of disciplines
- Forced positions/holding of objects
- Isolation/spurning/threats
- Confinement

"Time-Outs"

- Child torture acts may be normalized as "corporal punishment" to a child
- "What happens when you get in trouble at home"
- If response is a "time-out", ask the child to say what that is
- Screen for forced position holds
- Screen for forced exercise
- Set-up for child failure and beatings

Medical Definition of Child Torture as a Form of Child Abuse

- Longitudinal experience characterized by at least two physical assaults or one extended assault
- Two or more forms of psychological abuse
- Neglect (active neglect of medical needs)
- Resulting in prolonged suffering, permanent disfigurement or dysfunction or death

Commonly Seen Defenses in Cases involving *Burns*

It was Accidental!!

Water was fine – child turned the water to a scalding temperature

How Rapidly Does a Burn Injury Occur to a Child's Skin

- Children comfortably bathe at a temperature of 101 degrees Fahrenheit (38 degrees Celsius)
- Hot tubs typically have temperatures fluctuating between 104-108 degrees Fahrenheit
- Adults sense water as painfully hot between temperatures of 112-114 F (43-45 C)
- Deep 2nd degree burn for adults and children at 113 degrees Fahrenheit

Time-Temperature Scales

Exposure Time to Cause 2nd Degree Burns

Temp. (F)	Adult Skin	Child Skin
127	60 seconds	60 seconds
130	30	10
140	3	1
150	2	< 1
158	1	< 1

Adapted from Feldman KW et al. Tap water scald burns in children. Pediatrics, 1978;62:1-7
Moritz AR, Henriques FC. Studies of thermal injury, II: The relative importance of time and surface temperature in the cutaneous burns. Am J Pathology. 1947 23:695

Abusive Immersion Scald Injury

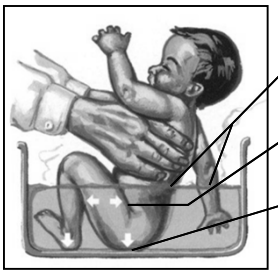
- Burn patterns demonstrating uniformity of burn depth suggest the child was restrained or not moving during the time of injury occurrence
- Bilateral burn symmetry in the absence of splash marks suggests forced immersion
- Bilateral, symmetric lower extremity burn distribution pattern occurs more frequently in abused children

Abusive Immersion Scald Injury

Immersion burns typically present with patterned injury demonstrating:

- Uniform burn depth
- Flexion sparing
- Linear/sharply defined contour between the burned and unburned skin areas
- Absence of splash marks
- Can have skin sparing in areas where the skin was in contact with cooler surfaces

Characteristics/Location of Thermal Burns Suggesting Abuse
Immersion Injuries



Immersion burns often result in typical patterns that give clues to mechanism of injury

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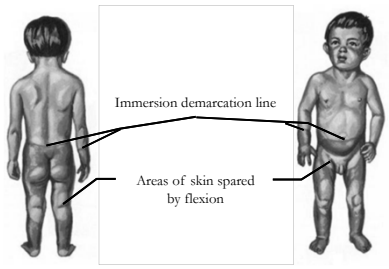
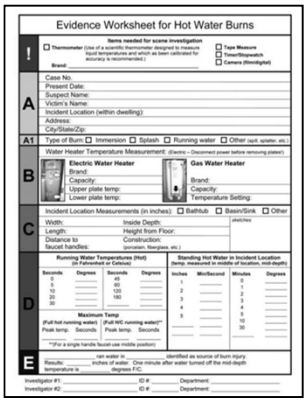
Characteristics/Location of Thermal Burns Suggesting Abuse
Immersion Injuries



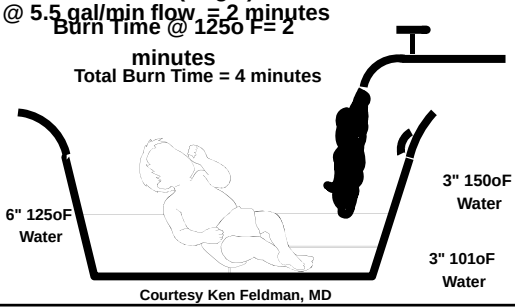
Typical immersion burn. Uniform degree of injury with interspersed protected areas.



Adapted with permission from Phylip J. Pelicer, District Attorney Investigator [retired], Paradise, CA, and from Pelicer, PJ, Purdue, G, Shepherd, JR: Burn injuries in child abuse. U.S. Department of Justice Office of Juvenile Justice and Delinquency Prevention 1997;19

Child left in comfortable water.
Parent returns to find hot running, child burned.

To add 3" (11 gal) @ 5.5 gal/min flow = 2 minutes
Burn Time @ 125o F= 2 minutes
Total Burn Time = 4 minutes



Courtesy Ken Feldman, MD

Commonly Seen Defenses in Cases involving *Burns*

It was Accidental!!

The Child Crawled into the Hot Iron I Put on the Floor

Commonly Seen Defenses involving *Child Starvation*

We offered food to the child, but she just wouldn't eat it.

She has an eating disorder.

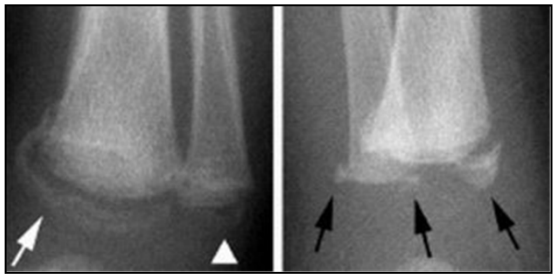
She has reactive-attachment disorder and other psychological issues.

Commonly Seen Defenses in Cases involving *Fractures*

It was Accidental!!

The 2-year-old sibling fell on the baby.

Metaphyseal Fracture



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Classic Metaphyseal Lesions

- Long bone fracture in the weakest part of growing bone
- Requires shearing forces not produced in accidental trauma
- Possibly produced during shaking where limbs flail about
- Also consider twisting and jerking

Myths About Fractures

- Babies bones break easily
  - Young infants have flexible bones that bend before they break
- There should be bruises over inflicted fractures
  - Bruises over inflicted fractures are rare
- Spiral fractures are nearly always abusive
  - Fact: Spiral fractures can be accidental if a twisting mechanism is implicated.

Fracture Location According to Association With Bruising

ARCH PEDIATR ADOLESC MED/VOL 162 (NO. 9), SEP 2008 Peters et al

Fracture Site	Total Fractures, No.	No Bruise or Bruise Not Near Fracture, No.	Bruise Near Fracture, No. (%)
Skull	71	35	32 (45.1)
Face	1	0	1 (100)
Rib	317	298	29 (9.1)
Humerus	33	30	3 (9.1)
Radius	29	26	2 (6.9)
Ulna	19	14	1 (5.3)
Femur	66	55	5 (7.6)
Tibia	64	61	2 (3.1)
Fibula	7	6	1 (14.3)
Spine	4	4	0
Pelvis	1	0	1 (100)
Clavicle	7	7	0
Acromion	2	2	0
Metacarpal	3	3	0
Metatarsal	2	2	0

Rib Fracture Causes

- Uncommon with birth trauma
- Not cardiopulmonary resuscitation, especially posterior rib fractures
- Compressive forces, not direct blows
- Seldom see overlying bruises
- After fractures, infant is usually asymptomatic

Rib Fractures

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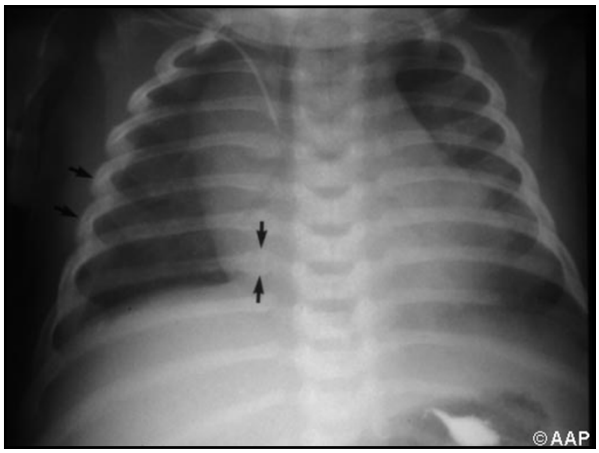
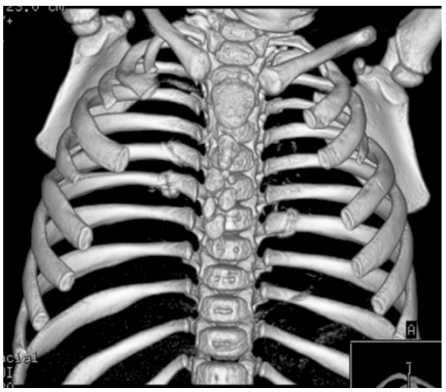
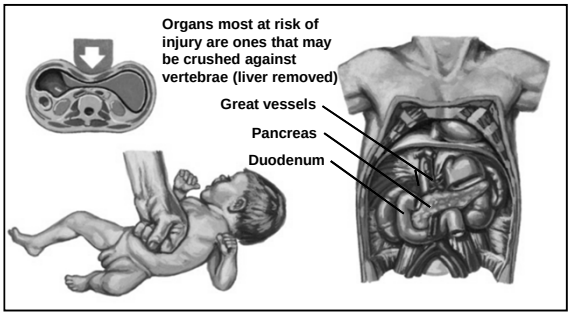




Abusive Abdominal Injury



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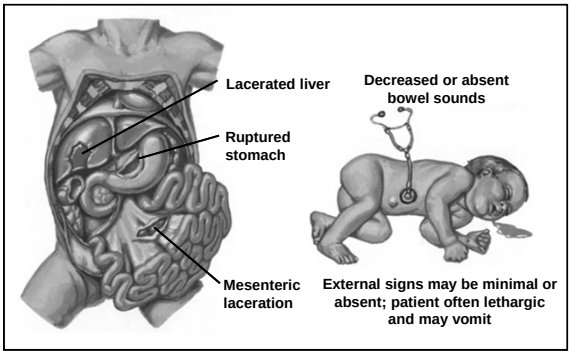
Abusive Abdominal Injury



Simple Household Falls

- Stairway falls in children rarely result in serious injury
- Joffe and Ludwig reported no intestinal perforations in 363 children who had stairway falls
- Authors found no difference in the number or severity of injuries in falls <,>, or = 4 steps
- Huntimer et al performed a literature search spanning 29 years of blunt abdominal trauma resulting in intestinal perforations-no stairway falls were reported for any of the 312 cases of small intestinal perforations

Dating the Injury

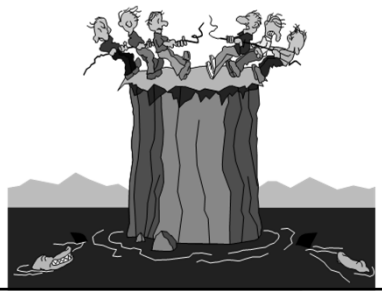
- Poor data on this topic
- Bowel wall hematoma injuries have delayed symptoms for hours or days (vomiting/pain as obstruction develops)
- Peritonitis can clinically present within hours of sustaining the injury
- For blunt liver trauma, when ALT>AST, the injury was older than 12 hrs.
- The larger the splenic or liver laceration, the quicker the signs of hypovolemic shock (presentation within minutes to hours)

Medical Evaluation

- The American Academy of Pediatrics recommends screening tests for abdominal injury in all physically abused children to evaluate for occult injuries
- Screening laboratory studies
  - CBC
  - Liver Function Tests
    - AST >450 and ALT >250 identified in children with liver damage from blunt trauma

ABDOMINAL INJURIES	ABUSE	ACCIDENTAL
AGE OF PATIENT	*< 5 years old*	*> 5 years old*
HISTORY OF TRAUMA	*ABSENT*	*PRESENT*
ASSOCIATED BRUISES	*60%*	*INFREQUENT*
ASSOCIATED FRACTURES or HEAD TRAUMA	*FREQUENT*	*INFREQUENT*
LIVER LACERATION	*LEFT LOBE*	*RIGHT LOBES*
HOLLOW VISCUS INJURY	*65%*	*8%*
HOLLOW VISCUS TYPE	*SMALL BOWEL*	*COLON*
ISOLATED KIDNEY or SPLENIC INJURY	*RARE*	*FREQUENT*
MORTALITY	*20-40%*	*5%*

Parting Tips



Use Leading Questions

- Favorable responses should be secured early
- Keep questions easily understood by jury
- Keep technical language to a minimum
- Define …

Use Leading Questions

- Don't fight over how questions should be answered … rephrase
- Fighting may make you appear out of control and defensive
- Don't give up

Establish Areas of Agreement

"Can we agree that …"

"You admit that …"

Shows jury that your goal is not to totally discredit

Challenge the Nonresponsive Expert

- **"I'll be asking questions that can be answered with a 'yes' or 'no'"**
- **"Excuse me, but perhaps you did not understand my question"**

Challenge the Nonresponsive Expert

- **Ask court reporter to read back question**
- **Appealing to court may emphasize your inability to control and be less effective**

Challenge with Prior Testimony

Important: First commit the expert to an answer …

Then use expert's own words to magnify the inconsistency

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Balance the Scales for Children