Myths Surrounding Child Abuse Evaluations

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Pediatric Grand Rounds
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Question 1

The most likely person involved in the abuse of a child is:

• A. The biological mother
• B. The biological father
• C. The mother’s boyfriend
• D. The grandmother
• E. The babysitter
Question 1

- A. The biological mother
- B. The biological father
- C. The mother’s boyfriend
- D. The grandmother
- E. The babysitter

Question 2

- Vitamin D deficiency is a common cause of limb fracture in an apparently healthy term newborn.
  - A. True
  - B. False

A. True

Question 3

Several bruises are noted on the back and lower extremities of a nonambulatory child. Most are blue to back, but some are green and yellow. This is most consistent with:

- A. Multiple incidents of abuse
- B. Accidental injury
- C. Old and new injuries
- D. Suggestive of non-accidental trauma, but impossible to date
Question 3

A. Multiple incidents of abuse
B. Accidental injury
C. Old and new injuries
D. Suggestive of non-accidental trauma, but impossible to date

Question 4

A 6 week old infant is found unresponsive. He does not appear to be breathing and mom calls 911 and begins CPR, though she has no formal training. EMS is called and the child is brought to the ER. He is found to have multiple posterior rib fractures and severe retinal hemorrhages. This is consistent with injury sustained by an untrained person performing CPR.

A. True
B. False

Question 5

A 14 year old girl presents to your office. She was previously in foster care and has a known history of repeated sexual abuse. She now lives with a wonderful family and appears happy and well adjusted. You ask her adopted mother to step out so you can talk to her alone. She denies drugs, depression, & SA, but begins to cry because she is certain she can never have a boyfriend because anybody would know “what she’s done”. What is the most appropriate response:

A. Reassure her there is no way to assess virginity
B. Explain while it may be obvious she has been sexually active, it should not matter
C. Assume she is lying about current SA and test her for GC/Chlamydia
Question 5

- A. Reassure her there is no way to assess virginity
- B. Explain while it may be obvious she has been sexually active, it should not matter
- C. Assume she is lying about current SA and test her for GC/Chlamydia

Case 1

- CC: Seven month old white male presents to MD with complaint of not moving left leg. No history of trauma.
- ROS: Formula fed. Good PO. Negative F/V/D
- PMHx: Term infant, no medications, Immunizations UTD
- Family History: Negative for Osteogenesis Imperfecta or any other bone disease
- Social History: Lives with parents and siblings
- PE: Normal Ht/Wt/HC, Normal vitals. Significant for tenderness to palpation of left leg only
- Labs: Normal Vitamin D, Alkaline Phosphatase, Calcium levels, CBC, CRP, ESR, Blood cultures

Radiology Report

- Possible acute nondisplaced spiral fracture in the distal left femoral metaphysis. Suspicion of metaphyseal fractures in the proximal left tibia and distal right tibia.
On Day of Presentation

Everybody has Rickets

- The increased frequency of vitamin D insufficiency/deficiency has been established as a worldwide problem.
- What has not been established, however, is a concomitant increase in the frequency of nutritional rickets in the offspring of mothers deficient in vitamin D.
- The commentary presented by Keller and Barnes presents no valid data to support their belief that the radiographic skeletal lesions they describe reflect DD and nutritional rickets.
- That metabolic bone disease including rickets may soften the bones and predispose to increased skeletal fragility is well known. However, unless there is laboratory and radiographic evidence of rachitic bone disease, there is no scientific basis for confusing vitamin D deficiency with fractures of abuse.
- Some years ago “temporarily brittle bone disease” was proposed as a cause of fractures in healthy infants. Subsequently the proposal has never been validated and has been thoroughly discredited.
- Currently there is no valid laboratory or radiographic evidence that “soft bone disease” associated with DD and rickets is responsible for multiple fractures in otherwise healthy newborn and young infants.
- In the absence of such confirmation of DD and rickets, such skeletal lesions as illustrated in their paper must be considered as fractures secondary to non-accidental injury and evidence of abuse.

Reviewed by David F. Merten, M.D. Excerpt from The Quarterly Update, Spring 2009.

Everybody has Rickets

Rickets vs. abuse: a national and international epidemic.
Kathy A. Keller, Patrick D. Barnes.

Rickets or abuse, or both? Rickets or abuse?
Russell W. Chesney.

Rickets or abuse?
Carole Jenny.

Evaluating the data concerning vitamin D insufficiency/deficiency and child abuse.
Thomas L. Slovis, Stephen Chapman.

Rickets

- Symptoms of rickets can range from none to varying degrees of irritability, delay in gross motor development, and bone pain.
- Signs include widening of the wrists and ankles, genu varum or valgum, prominence of the costochondral junctions (rachitic rosary), delayed closure of fontanelles, craniotabes, and frontal bossing. Tooth eruption may be delayed and tooth enamel may be of poor quality if vitamin D deficiency occurs in utero or in early infancy, increasing the risk for caries. Rickets also may be associated with poor growth (a manifestation of associated bone disease) and an increased susceptibility to infections.
- The diagnosis of rickets depends on presence of the clinical features mentioned above and radiologic and laboratory features.
- Radiologic images may indicate osteopenia and cortical thinning of long bones, stress fractures, and metaphyseal widening and fraying.
- Unreliability of commonly used vitamin D assays and lack of agreement regarding the definition of a “normal” population has led to some difficulty in the establishment of reference ranges for serum 25(OH)D concentrations.
Alkaline Phosphatase (ALP) may be used to screen for rickets, with the caveat that rickets has sometimes been reported with normal ALP levels. When a high index of suspicion exists, a wrist or knee radiograph should be obtained. The best way to assess vitamin D status is to measure 25(OH)-D levels.

Rickets produces characteristic clinical and radiographic findings:
- Cranial bones manifest early in infants with vitamin D deficiency.
- If rickets occurs at a later age, thickening of the skull develops. This produces frontal bossing and delays the closure of the anterior fontanelle.
- In the long bones, laying down of uncalcified osteoid at the metaphases leads to spreading of those areas, producing knobby deformity, which is visualized on radiography as cupping and flaring of the metaphyses.
- In the chest, knobby deformities result in the rachitic rosary along the costochondral junctions. The weakened ribs pulled by muscles also produce flaring over the diaphragm and the sternum may be pulled into a pigeon-breast deformity.
- Weight bearing results in a bowing of the lower extremities.
- In more severe instances in children older than 2 years, vertebral softening leads to kyphoscoliosis.
- Because the softened long bones may bend, they may fracture one side of the cortex resulting in a greenstick fracture.

Vitamin D Deficiency in Children and Its Management: Review of Current Knowledge and Recommendations
Madhusmita Misra, Danièle Pacaud, Anna Petryk, Paulo Ferrez Collett-Solberg, Michael Kappy and on behalf of the Drug and Therapeutics Committee of the Lawson Wilkins Pediatric Endocrine Society Pediatrics 2008;122;398-417
Our case revisited…

Note there is no metaphyseal flaring
Skeletal Survey Report

- The chest x-ray reveals a new finding of a healing posterior rib fracture, specifically the right posterior 10th rib. No other healing or acute rib fractures are identified.
- There is a healing left femoral fracture. There is significant periosteal reaction noted. This fracture was suspected although not confirmed on the prior study. There is increased diastases of the metaphyseal fracture line with diaphyseal periosteal reaction. A fiberglass cast overlies the left lower leg.
- There is mild bony demineralization of the left tibia and fibula. There is a small amount of periosteal reaction seen along the anterior, distal left tibial metaphysis consistent with healing fracture previously noted. The previously identified metaphyseal corner like spurs have reincorporated into the metaphyseal. There is periosteal reaction along the medial aspect of the distal right tibial metaphysis consistent with healing corner fractures as noted on the prior exam. The metaphyseal corner irregularities on the right distal tibia have also reincorporated into the bone.
- No additional fractures are identified.
Who needs a skeletal survey?

- **Mandatory** in all cases of suspected child abuse younger than age **2 years**
- Little value in children older than 5 years
- If one infant twin is injured the other is at risk and should undergo a skeletal survey
- Although there seems to be a link between sexual abuse and physical abuse the prevalence of fractures is low thus skeletal surveys should be performed only when clinically indicated
- A followup skeletal survey should be repeated in **2 weeks** when abnormalities or equivocal findings are noted on initial study
- Lack of interval change may indicate initial finding is a normal anatomic variant or related to bone dysplasia

### TABLE 1 Complete Skeletal Survey Table

<table>
<thead>
<tr>
<th>Appendicular skeleton</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Arms (AP)</td>
<td></td>
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<tr>
<td>Forearms (AP)</td>
<td></td>
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<tr>
<td>Hands (PA)</td>
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<td>Thighs (AP)</td>
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<td>Legs (AP)</td>
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<tr>
<td>Feet (PA or AP)</td>
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<table>
<thead>
<tr>
<th>Axial skeleton</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Thorax (AP and lateral), to include thoracic spine and ribs</td>
<td></td>
</tr>
<tr>
<td>AP abdomen, lumbosacral spine, and bony pelvis</td>
<td></td>
</tr>
<tr>
<td>Lumbar spine (lateral)</td>
<td></td>
</tr>
<tr>
<td>Cervical spine (AP and lateral)</td>
<td></td>
</tr>
<tr>
<td>Skull (frontal and lateral)</td>
<td></td>
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</tbody>
</table>

***Consideration should be given to including oblique rib films in standard survey***

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**Case 2**

- **CC:** Five month old white female presents to ED with altered mental status after reportedly rolled off couch while alone with father.
- **ROS:** No fever, previously acting "normal" with good PO and urine output
- **PMHx:** Term, Mild GERD, Immunizations UTD
- **Family history:** No bleeding disorders
- **Social Hx:** Primary caregiver biological father while mom works
- **PE:** Normal Ht/Wt/HHC 90th%, VS normal, significant for lethargic infant with minimal interaction
- **Labs:** Normal CBC, PT/PT/T/Bleeding studies, CMP
Radiology Report

- Small bilateral parietal convexity subdural fluid collections which are of higher signal than CSF and may be composed of subacute to chronic hemorrhagic components or proteinaceous components.
- There is a small amount of subacute hemorrhage identified bilaterally in the occipital subdural space as well as along the left parietal convexity extending into the interhemispheric fissure.

Fundoscopic Exam

The Killer Couch


- Reviewed by Robert M. Reece, MD
Comment: Without doubt, this is the most comprehensive analysis of the problem of child fatalities resulting from short falls in infants and young children to date. Although one cannot (and should not) say that fatal outcomes can never happen in short falls, this review of the data and the peer-reviewed literature on the subject helps emphasize the extreme rarity of fatal outcomes resulting from short falls. This article needs to be understood by all who care for children and by all who must explain the rarity of short fall fatalities to medical colleagues, to child protection agencies, to parents and caretakers, and to courts. Excerpt from The Quarterly Update—Winter 2008.
The Killer Couch

Because falls from short distances are unlikely to produce serious injury, the reliability of the history should be questioned when the child has significant injury said to have resulted from a short fall.


The Killer Couch

- As a basic principle, simple injuries are caused by simple mechanisms like falls whereas life-threatening injuries should be attributed to abuse until proven otherwise.
- Implausibilities between reported events and mechanisms by caregivers as well as more than one explanation of injury indicate suspicion of child abuse.
- Children who experienced a fall at home seldom exhibit fractures of the skull but just minor intracranial injuries without neurological deficits.
- Regarding biomechanical aspects, multiple or complex skull fractures, depression fractures, additional fractures of the body, and subarachnoidal subdural hemorrhage as a consequence of an impact are the most important findings in child abuse.
- Moreover, additional specific morphological criteria give evidence of clinical and post-mortem diagnosis of the shaken baby syndrome (abusive head trauma). These include subdural hemorrhage and laceration of the brain and retinal bleeding, subdural hemorrhage of the cervical cord, gripping marks (bunions) on chest and/or shoulders, and tearing injuries of the throat and neck muscles.
- A clinical diagnosis will be dependent on the one hand on the exclusion of coagulation diseases, on the other hand on the demonstration of a subdural hemorrhage by means of neuroimaging techniques, i.e., CT and MRI, as well as retinal hemorrhage.


The Killer Couch

- Cases of witnessed falls from heights of 16 ft (3 m) on autopsy showed multiple complex calvarial skull fractures, base fractures, or both, subdural and subarachnoidal hematomas was found in all cases, and two showed severe cerebral edema.
- None had retinal hemorrhage or axonal injury.
- These are compared with 19 fatalities initially alleged to have occurred from short falls of 5 or > 5 ft (1.5-1.8 m).
- As others have found, most of these "minor fall" fatalities occurred under circumstances where there were no uninvolved witnesses to corroborate the initial history.
- Autopsy findings in these cases tended to be of unexpected severity for the initially proposed mechanism of injury, and a number of cases showed evidence of acceleration injury (e.g., retinal hemorrhage and/or diffuse axonal injury) where no such mechanism was accounted for by initial history.
- After sufficient investigation, most of these cases (74%) have ultimately been proven to represent inflicted trauma.

The Killer Couch

- 70 children were admitted from 1985 to 1988 after sustaining a fall of 10 feet or greater or at least one story. Seventy-eight percent of falls occurred from 2 stories or less and usually took place at or near the home. Most patients sustained a single major injury and all survived. The majority of injuries involved the head or skeleton and residual functional deficits were uncommon.

Case 3

- CC: Four week old infant brought to ED by EMS after dad reportedly performed CPR on infant because "turned blue."
- ROS: No fever, No V/D, No respiratory illness
- PMHx: Full term, Mtd GERD, Immunizations UTD
- Family history: Negative for bone disease or bleeding disorders
- Social Hx: Dad is primary caregiver while mom works
- PE: Vitals normal including Ht/Wt/HC, Irritable, visible bruising over posterior ribs right>left with tenderness to palpation
- Labs: Normal CBC, PT/PTT, and bleeding studies, Normal Ca, Alk phos, blood and urine cultures neg
- Skeletal survey: Healing right 6th through 9th right rib fractures as well as healing left 6th and 7th rib fractures and probable healing 9th left rib fracture. Acute to subacute metaphyseal corner fractures involving both distal femur, proximal and distal tibia, and distal right fibula
- Opho consult: bilateral extensive retinal hemorrhages

Retinal Hemorrhages

- Ophthalmologists use the indirect ophthalmoscope to view the entire retina.
- Examination by non-opthalmologists using only a direct ophthalmoscope is insufficient.
- In considering causation of retinal hemorrhage, it is important to detail types of retinal hemorrhage ( preretinal, intraretinal, subretinal), number of hemorrhages, distribution of hemorrhages (confined to back [posterior pole] of the retina or spreading to edges [ ora] of retina) and pattern of hemorrhages.
- Two-thirds of SBS victims have too numerous to count, multi-layered retinal hemorrhages extending to the ora.
- 15% have no retinal hemorrhages. Absence of retinal hemorrhage does not rule out child abuse.
CPR Injuries

Retinal hemorrhages do not occur following CPR-CC unless:
• other risk factors for hemorrhage*
• severe head trauma*
• child abuse*
• very few RH in post pole only*


CPR Injuries

• Traumatic retinoschisis is a particularly diagnostic lesion caused by traction applied to the retina by the vitreous jelly as the child is submitted to repetitive acceleration-deceleration forces.

• The retina splits, creating a blood filled cystic cavity, not reported in otherwise well children except SBS victims and perhaps severe head crush injury which would otherwise be obvious by history.

Levine, Alex. www.dontshake.org

CPR Injuries

• Retinal hemorrhages are rarely found after chest compressions in pediatric patients with nontraumatic illnesses, and those retinal hemorrhages that are found appear to be different from the hemorrhages found in the shaken baby syndrome (abusive head trauma). Despite the small number of patients in this prospective study, we believe that these data support the idea that chest compressions do not result in retinal hemorrhages in children with a normal coagulation profile and platelet count.


CPR Injuries

• One hundred thirteen children, including 41 victims of child abuse, 50 patients who had CPR, and 22 patients who had rib fractures, were studied. Twenty-nine patients had rib fractures; 14/29 (48%) were abusive. Other causes of fracture were: motor vehicle accidents (four), rickets/osteoporosis (five), surgery (five), and osteogenesis imperfecta (one). In spite of prolonged resuscitation performed with variable degrees of skill, no fractures could be attributed to CPR. On the other hand, rib fractures occurred frequently in abused children (64/1 or 15%). Abusive fractures were often multiple, of different ages, and affected multiple adjacent ribs.

CPR Injuries

• Of the 427 studies reviewed, 6 were included: 1 case control, 4 cross-sectional, and 1 case series. These represent data on 923 children who underwent CPR. Three children sustained rib fractures as a result of resuscitation; all three of these had fractures that were anterior (two mid-clavicular and one costo-chondral). We did not find any child in the literature who had a posterior rib fracture due to CPR. Resuscitation was performed variably by both medical and non-medical personnel. CONCLUSION: Rib fractures after cardiopulmonary resuscitation are rare. When they do occur, they are anterior and may be multiple.


CPR Injuries

• Occasionally, individuals accused of inflicting fatal injuries on infants and young children will claim some variant of the “CPR defense,” that is, they attribute the cause of injuries found at autopsy to their “untrained” resuscitative efforts. A 10-year (1994-2003) historical fixed cohort study of all pediatric forensic autopsies at the Miami-Dade County Medical Examiner Department was undertaken. Twenty-two findings potentially attributable to CPR were identified (in 19): 15 cases of orofacial injuries compatible with attempted endotracheal intubation; 4 cases with focal pulmonary parenchymal hemorrhage, 1 case with prominent anterior mediastinal emphysema; and 2 cases with anterior chest abrasions. There were no significant hollow or solid thoracoabdominal organ injuries. There were no rib fractures. The estimated relative risk of injury subsequent to resuscitation was not statistically different between the subset of decedents whose resuscitative attempts were made by trained individuals only, and the subset who received CPR from both trained and untrained individuals. In the single case of CPR application by an untrained individual only, no injuries resulted. This study indicates that in the pediatric population, injuries secondary to resuscitative efforts are infrequent or rare, pathophysiologically inconsequential, and predominantly orofacial in location.


CPR Injuries

• Other mechanisms, including CPR, have been thought to be the cause of rib fractures. Several studies in children have shown that rib fractures secondary to CPR are extremely rare. Only 2 infants in our series received CPR and neither infant sustained the fractures during the resuscitation. One infant had healing rib fractures and in the other case there was a confession of abuse. “Cause and Clinical Characteristics of Rib Fractures in Infants” Blake Bullough, Charles L. Schubert, Patrick D. Brophy, Neil Johnson, Martin H. Read and Robert K. Shepard Pediatrics 2000;105;e48 DOI: 10.1542/peds.105.4.e48

• Cardiopulmonary resuscitation, whether performed by experienced or inexperienced individuals, is an unlikely cause of rib fractures or retinal hemorrhages. “Evaluation of Suspected Child Physical Abuse” Nancy O. Kellogg and and the Committee on Child Abuse and Neglected Pediatrics 2007;116;1232-1241

• Our Case revisited…
Radiology Report

- There are *however* noted healing rib fractures bilaterally, specifically 6th through 9th posterior ribs on the right and 6th and 7th posterior ribs on the left.

Skeletal Survey

- There is a nondisplaced acute left humeral fracture as seen on dedicated humeral studies.
- There are healing 6 through 9th posterior rib fractures on the right and there are healing 6th, and 7th and probable 9th posterior rib fractures on the left.
- There are *metaphyseal irregularities* involving the distal femoral metaphyses bilaterally. Similar irregularities are seen involving the proximal medial tibial metaphyses. There are linear lucencies involving the *distal right tibial and fibular metaphyses* as well as faint periosteal reaction adjacent to the distal metaphysis of the left tibia.
- *These findings are consistent with metaphyseal corner fractures.*
Case 4

- CC: 6 mo old refusing to move his left leg
- HPI: While co-sleeping with parents, mom rolled over and heard a pop. He began crying immediately and would not move left leg. He held hip in flexed internally rotated position. She took him to ER 8 hours later.
- ROS: No fever, feeding well, fussy but consolable
- PMHx: Term, previously healthy Mild GERD, Immunizations UTD
- Family history: No bleeding disorders
- Social Hx: Stays with paternal grandmother while mom works
- PE: Normal Ht/Wt/HC 90th%, VS normal, cries with any movement left hip, multiple bruises on back of various colors
- Labs: Normal CBC, PT/PTT/Bleeding studies, CMP

![Image of medical records]

![Image of bruises stages chart]
Black and Blue, Old or New?

- Bruising of the skin develops after the application of blunt force sufficient to disrupt blood vessels, resulting in blood extravasation and accumulation in the dermal layers.
- A bruise may not become apparent for hours or even days after injury, depending on the depth of the vessels disrupted.
- After bleeding has started, the bruise continues to deepen in color until bleeding stops.
  - Initially the color is blue to blue-black as a result of deoxygenated blood.
  - As macrophages ingest the erythrocytes and convert the hemoglobin to bilirubin, the color of a bruise changes, depending on the amount of blood extravasated and the distance from the surface of the skin.
- Both mobilization of the pigment by macrophages and further metabolism of bilirubin result in gradual fading of the bruise, beginning at the periphery and proceeding toward the center.

Dating bruises...

- Langlois and Gresham studied 369 photographs of bruises of varying ages and assessed them for the presence of particular colors. On the basis of this study, they concluded that age of a bruise could not be determined consistently from color alone, although bruises that displayed yellow color were found to be >48 hours old.
- Stephenson and Bialas conducted a study in which a history-blinded observer estimated the age of 50 accidental bruises photographed from 23 children aged 8 months to 13 years. They concluded that aging of bruises from color alone was unreliable and much less precise than pathology textbooks suggested, although, an injury >48 hours old was unlikely to be estimated as one <48 hours old.

Case 5

- CC: Nine year old female who discloses sexual abuse presents to local children’s advocacy center for sexual abuse exam. Last reported contact with perpetrator 3 months ago.
- ROS: No abdominal pain, constipation, rashes, dysuria, vaginal discharge, rectal or vaginal bleeding
- PMHx: Previously healthy, Immunizations UTD
- Family history: Noncontributory
- Developmental history: Normal for age
- Social Hx: Lives with mom and mom’s paramour, visits father on weekends. Mother extremely concerned about patient’s appointment today.
Our local CAC

Every child deserves to be safe...
The Comprehensive Medical Exam

Who? A child/adolescent needs an examination when there is a suspicion of sexual abuse, when there are physical signs and symptoms of genitourinary problems, when there is a history of pain, injury, or possible trauma, or the child/adolescent and family need reassurance.

What? Instruments that magnify and illuminate the genital and rectal areas should be used. Speculum or digital examinations should not be performed on the prepubertal child unless under anesthesia (eg, for suspected foreign body), and digital examinations of the rectum are not necessary.1

Where? The child should have a thorough pediatric examination performed by a healthcare provider with appropriate training and experience who is licensed to make medical diagnoses and recommend treatment.1 Dr. Debra Quarles Mills is Board Certified by the American Board of Pediatrics in Child Abuse Pediatrics and evaluates patients at The Children’s Advocacy Center.

• When? When the alleged sexual abuse has occurred within 72 hours or there is an acute injury, the examination should be performed immediately. When more than 72 hours have passed and no acute injuries are present, an emergency examination usually is not necessary. As long as the child is in a safe and protective environment, an evaluation can be scheduled at the earliest convenient time for the child, physician, and investigative team.1 Our CAC performs non-acute medical exams for alleged sexual abuse victims whose last abusive event occurred more than 72 hours prior to disclosure/discovery.

• Why? The medical evaluation is first and foremost just that: an examination by a medical professional with the primary aim of diagnosing and determining treatment for a patient’s complaint.1

References

Sexual Abuse Exams are Non-traumatic

• 57% of parents expressed extreme levels of stress prior to exam, but only 22% reported actually experiencing stress during exam p<0.05
• 57% of parents thought exam would be stressful to child but only 17% found it to be p<0.05
• 87% of parents thought exam would be painful for their child but only 48% found it to be so p<0.01
• 97% of parents thought exam would be stressful for child, but only 66% of children reported feeling scared prior to exam p<0.05
• Lack of knowledge about exam was associated with significant parental levels of pre-exam stress
Sexual Abuse Exams are Non-traumatic

• The authors conclude that the medical exam is not as stressful as they expected and they challenge the notion that the exam is traumatizing for the child.
• They note physician experience in the medical examination of child sexual abuse has an influence on the degree of distress experienced by the parent and the child.
• Parental stress is significantly related to lack of knowledge about the exam emphasizing the importance of education of staff at referral agencies to reduce misinformation and misconceptions regarding the medical exam.

Case 6

• CC: Two year old female removed from home yesterday due to discovery of known sexual perpetrator living in the home with previously reported history of gonorrhea.
• ROS: Vaginal discharge and odor x 1 week, No FVD, no dysuria.
• PMHx: Full term, no hospitalizations, Immunizations UTD.
• Family history: Negative.
• Social Hx: Previously living with mom and uncle who is a registered sex offender.
• Labs: neg GC/Chlamydia, HIV, Syphilis, Hep A/B/C.

STI Screening in Children

• The decision to obtain genital or other specimens from a child who has been victimized sexually to conduct an STI evaluation must be made on an individual basis. The following situations involve a high risk of STIs and constitute a strong indication for testing:
  • The child has or has had signs or symptoms of an STI or an infection that can be transmitted sexually, even in the absence of suspicion of sexual abuse.
  • A sibling, another child, or an adult in the household or child’s immediate environment has an STI.
  • A suspected assailant is known to have an STI or to be at high risk of STIs (e.g., has had multiple sexual partners or a history of STIs) or has an unknown history.
  • The patient or family requests testing.
  • Evidence of genital, oral, or anal penetration or ejaculation is present.

AAP Red Book Online 2009.
Adams Classification

• An important finding is that many injuries to the hymen and other genital tissues had healed completely at time of follow-up leaving no sign of previous injury.
• Even significant hymen lacerations healed to leave no sign of injury
• Therefore in cases when an exam is several days, weeks, or months after the suspected episode and no clear sign of injury to genital tissue is evident, the possibility of previous injury cannot be ruled out
Two weeks later. After removing FB,

The Virginity Test

- Bodies without evidence
- September 21, 2002
- It was 1981. Lady Diana Spencer was about to marry Prince Charles. Then came the intriguing news that the girl was required to undergo a gynecological test to confirm her virginity. It was Diana's uncle, Lord Fermoy, who made the announcement. "Diana, I can assure you, has never had a lover," he told the bemused press conference.
- "I knew I had to keep myself tidy for what lay ahead," was Di's comment on her virginal state. The press tiptoed around the topic, speculating on the miracle of Charles finding an intact 19-year-old bride in the aftermath of the '70s sexual revolution—a time when virgins had attained almost mythical perspective, like unicorns, as a National Times reporter commented.
No More MYTHS!!!!!

- Everybody has rickets
- The Killer Couch
- CPR injuries
- Dating bruises
- Sexual abuse exams are traumatic
- The Virginity Test

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Dating Bruises

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Dating Bruises

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Sexual abuse exams are traumatic

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The Virginity Test

- AAP Red Book Online 2009

One Final Question?

- Seven month old male presents to ED with history of vomiting. PE reveals lethargic infant with facial bruising. Workup reveals bilateral extensive retinal hemorrhages, L subdural hematoma and multiple rib fractures in different stages of healing.
- The most likely diagnosis is:
  - A. rickets
  - B. accidental trauma from rolling off couch
  - C. injuries from CPR performed by dad at home
  - D. non-accidental trauma
Special Thank You to Dr. Mills for co-authoring this presentation

QUESTIONS?

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