AMERICAN COLLEGE OF EMERGENCY PHYSICIANS
SCIENTIFIC ASSEMBLY
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Child Maltreatment: Will These Articles Change Your Testimony?

Child maltreatment, both physical and sexual, is often a cause of morbidity in pediatric emergency department patients. The emergency physician may be required to not only recognize and manage the abused child but also render opinions for the social service or legal system. To perform these important roles effectively, the emergency physician must be aware of and understand what is now known about child maltreatment. The lecturer will review the available literature on child maltreatment and discuss how this knowledge base may aid the emergency physician in the recognition, management, and disposition of these patients.

- Discuss what is known about both physical and sexual abuse in pediatric patients.
- Discuss the optimal evaluation and proper terminology to describe findings in potentially abused children.

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FACULTY

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CHILD MALTREATMENT

DEFINITIONS and STATISTICS

• child maltreatment – defined as harm to a child because of abnormal child-rearing practices
  - includes physical abuse, sexual abuse, emotional abuse, neglect, substance abuse by the parents, supervisional neglect, and Munchausen syndrome by proxy.
• Child abuse condemned by writers Dickens and Hugo in the 19th Century.
• In 1860, A. Tardieu first wrote about child abuse in the medical literature.
• 1889 saw the development of the first organization for the protection of children (although this was 67 years after the introduction of legislation to protect animals).
• Radiologist John Caffey in 1946 first described the association of subdural hematomas, long bone and rib fractures, as not a disease, but as a result of inflicted trauma.
• C. Henry Kempe and others in 1962 coined the term *battered child syndrome*.
• In 1996, 3 million children reported to child protective services and 1 million of these confirmed as victims of child maltreatment.

LAWS and RESOURCES

• 1974 Child Abuse Prevention and Treatment Act defined child abuse as "the physical or mental injury, sexual abuse, negligent treatment, or maltreatment of a child under the age of 18 by a person who is responsible for the child's welfare under circumstances which indicate that the child's health or welfare is harmed or threatened thereby".
• Every state has passed statute for discovering and stopping child abuse and every state has a law that makes it MANDATORY FOR ALL HEALTH PROFESSIONALS TO REPORT ANY SUSPECTED ABUSE OR NEGLECT.
  - most child abuse reporting laws require physicians or other health care providers to report "reasonable suspicions" of abuse.
• Definitions – sexual abuse – Kempe, "as the involvement of children and adolescents in sexual activities they do not understand, to which they cannot give informed consent, or that violates social taboos".
• Definitions – sexual abuse – Giardino, "the involvement in sexual activities by an older person of a dependent, developmentally immature child or adolescent for that older person's own sexual stimulation, or for the gratification of other person's, as in child pornography or prostitution".
• Definitions – physical abuse – "an act, opposed upon a child, for which, if opposed upon an adult, would result in a charge of assault and battery".

TRAINING the EXAMINERS

• Child abuse examiners must have the necessary time and training to minimize additional trauma to the child and maximize the case against the perpetrators.
• Medical professionals are sometimes hesitant to report suspected abuse or neglect cases, because they feel they are not "100% certain" of the abuse
• Reasons given for not reporting – 1) insufficient training to recognize abuse, 2) feeling that professionals can do more for the family than an Agency, 3) drain on emotions or time, 4) fear of testifying, 5) feeling that the system will not protect the child.
• Other concerns include fear of how the parent will react or concerns for the child when he is removed from the home he or she knows.
• PHYSICIANS ARE REQUIRED BY LAW TO REPORT ALL SUSPECTED CASES OF ABUSE AND NEGLECT; failure to report cases, when suspected, can lead to a fine, imprisonment, and potential malpractice.
• Possibility of a lawsuit against a physician for an alleged "false report" exists, but as of January 1999 there has been no successful "false report" suit against a physician.
• Parental anger is often seen when a child abuse report is filed; do not be accusatory; acknowledge their anger but also note your concern for the child well-being; inform the parents that you, as a physician, are required by law to report suspected abuse cases.

PHYSICAL ABUSE

WHO ARE THE VICTIMS?

• 2 million children every year suffer physical abuse, and 2000-5000 are killed due to abuse.
• Experts estimate that 1.3-10% of all pediatric injuries in the ED are caused by abuse.
• Red flags:
  - age of the child - 1/3 cases occur in children < 6mo old; 1/3 in kids 6mo – 3yo; 1/3 in kids older than 3yo
  - boys are slightly more likely to be harmed than girls.
  - normal development may trigger abuse in certain families – feeding issues, colic episodes, toilet training; many times "triggering behaviors" such as excessive crying or colic put the child more at risk.
  - children with chronic illnesses or handicaps are also at potential risk because of the additional stress these factors may impose.

WHO ARE THE ABUSERS?

• Red flags:
  - past violent behavior is probably the best indicator of future abusive behavior
  - younger parents are more likely to injure or kill their children than older parents; less likely to know about normal child development, and less likely to have good coping skills.
  - women are more likely accused of abusing, but men are likely to severely injure or kill their children; typically, the parent with caretaking responsibilities is more likely to abuse the child.
  - addicted parents, especially those under stress or social isolation, are at risk for abuse.
  - life stressors such as illness, unemployment, new baby, death of relatives may put parents at risk for abuse.

- cycle-of-violence hypothesis states maltreatment many times is learned from childhood and passed on to subsequent generations; many abusive parents have learned parenting skills based on their own experiences as children.
- Home-life often includes frequent moves, unstable incomes, history of spousal abuse, poor support system for the parents, or substance abuse.
- poverty does not predict abuse; abuse is found in all socioeconomic groups, but most abuse reports are in poor families; poverty and higher unemployment can result in more interaction with social welfare, police and health care workers, and so, more reports; remember, most economically poor families do not abuse their children.

HISTORY OF THE INJURIES?

• Red flags:
- a history inconsistent with the nature or extent of the injuries, e.g. a fall from a bed in a young infant who is still unable to roll over
- inability to explain how the injuries were sustained
- circumstances around the injury keep changing
- a difference in stories between what the child says and what the caretaker says
- a history of previous trauma in the patient or siblings
- delay in seeking medical attention for the injuries
- multiple visits to the ED in a short period of time; parent may be indirectly asking for help

• Understand normal motor development in children
• Record the developmental milestones achieved by the child, e.g. rolling over, sitting unsupported, walking
• Record parental behavior in the ED, e.g. parent holding child in arms, and if parents appear intoxicated or under the influence of drugs
• Record the level of concern that parents display toward the child

• Question the child directly regarding the circumstances of the injury; record what the child says verbatim. Often allowed in court under exceptions to the hearsay rule.
• Serious injuries in young children without an obvious cause (e.g. child hit by a car and brought in by paramedics) should be viewed suspiciously; be suspicious when a child states the serious injury was caused by another child, or self-inflicted, or was caused by an unknown person.
• Observe the child during the history and exam for abnormal or unusual behavior; abused children are often compliant or submissive; they often readily submit to painful procedures like blood drawing or examinations; often they are overly affectionate to the physician or nurses, rather than the parent; often abused children will protect the abuser by lying about the circumstances of the injury.
• Observe the parent for non-supportive or non-comforting behavior toward the child; abusive parents may refuse medical tests or become angry at the medical staff; they may ignore major injuries or become obsessed with the care of seemingly minor injuries; they may confess privately that they are fearful of losing control with the child and feel like they are not coping.

COMMON ACCIDENTAL INJURIES

INFANTS: NEWBORN – 1 YEAR

Birth trauma - skull fxr, clavicle fxr, cephalohematoma, humerus fxr, femur fxr, metaphyseal fxr

Falls or accidentally dropped – simple skull fxr or soft tissue injury

TODDLER: 10 M0NTHS – 3YEARS

Collisions or falls – soft tissue injury e.g. bruises, at bony prominences, superficial lacs, fxrs of clavicle, distal radius/ulna or skull fxr, toddler's tibia fxr, splash burns to anterior surface of body

Hand injuries – distal phalanx injury (bony or soft tissue), usually from accidental crushing in doors

YOUNG CHILD: 3 YEARS – 5 YEARS

Collisions or falls – distal radius/ulna or clavicle fxr, simple or depressed skull fxr, soft tissue injury, e.g. bruises or abrasions, at bony prominences.

SOFT TISSUE INJURY LOCATIONS

Possibly unintentional – shins, knees, hips (iliac crests), spine prominences, forehead, chin, lower arms, elbows, inner aspects of upper arms

Probably intentional – buttocks, inner thighs, genitalia, perineum, rectum, facial scratches in infant (except young infants with untrimmed nails), abdomen, chest, cheeks, neck, ears

PHYSICAL EXAM?

• Record child's general appearance and hygiene.

• Record the child's behavior during the exam – the emotional state, the level of passivity, excessive fears, behavior changes when a parent is near, level of trust, ability to follow directions

• When possible, photographs should be taken of any visible injury and kept as forensic evidence.

• One study showed a significant head injury requires a fall from a distance of 4 feet or higher (J Trauma 1993 Chadwick)

• Falls from a bed or sofa never result in serious injury beyond an uncomplicated fracture or bruise (J Trauma 1993 Chadwick)

• **Bruises and lacerations**

- Red flag – bruises in usual locations or where an accidental cause is implausible because of age or developmental status of the child (e.g. non-ambulatory child with multiple bruises)
- Red flag – bruises that have characteristic patterns that suggest an object was used to inflict injury – e.g. handprints, linear marks from belts or cords, buckle imprints
- young children will normally have bruises over bony prominences, such as the forehead, anterior shins, or knees; accidental bruising usually occurs on a single body plane (one side)
- most accidental tumbles, such as a fall downstairs, may result in bruises on multiple sides, but will occur generally on bony prominences, and not soft-tissue areas
- bruises over multiple areas or unusual areas, such as the low back, buttocks, cheeks, ears, necks, corners of the mouth, or lips suggest abuse
- bite marks usually leave bruising centrally and teeth marks along the periphery; distances between teeth marks should be recorded; a distance between canines greater than 3 cm indicates adult teeth; if the bite is fresh, swab it for possible recovery of saliva of the biting person for ABO secretor antigens and DNA evidence.
- lacerations in the mouth or to the frenulum may be a result of force feeding

- lacerations in the genital area may be a result of a toilet-training "punishment"
- record the color of bruises – initially no discoloration is seen at the site of bruising, only swelling and tenderness. Within 1-2 days, red-blue color, lasting about 5 days. Day 5-7, green. Day 7-10, yellow. Day 10-14, brown then resolves. May take 4 weeks to completely resolve.
    - bruises in infants may change color more rapidly with red or blue coloring during first 24 hours, and then change to yellow as early as day 3-5.
- traumatic alopecia – results from violent sudden hair pulling; will appear as diffuse, non-discrete area that is incompletely bald and contains broken hairs of various lengths and no loose hairs at the periphery (unlike alopecia areata).

- **Burns**
    - Red flag – 2nd degree burn that show a characteristic pattern (e.g. sole plate of an iron)
    - Red flag – 2nd degree burn with bullae and no evidence of a splash mark or have an unusually sharp line of demarcation (e.g. glove or stocking burn of an extremity)
    - Red flag – burns limited to the perineum
    - burns may be the result of direct abuse or insufficient supervision.
    - accidental burns will generally have a "splash" configuration, with a central burn that flows into burned areas with a streak or dotted pattern, e.g. a cup of coffee accidentally spilled down a child's front of chest.
    - accidental burn in a hot bathtub, the burn edges will be poorly demarcated; the burn itself will be of varying depths; and splash burns will occur as the child moves about to avoid the hot water
        - home hot water heaters are many times set between 55-65 degrees C (140-150F); water at 65C will cause a full thickness burn in 2 seconds; 55C will cause it in 30 seconds.
        - 24 mo old children can climb into a bathtub and turn a knob
    - non-accidental burns can include immersion burns, e.g. an entire hand or foot involved. Many of these will have a sharp line of burn demarcation.
    - often toilet-training "punishment" involves immersion into a bathtub filled with hot water. Areas of skin above the water level will be spared (knees, anterior thighs, upper abdomen). Areas immersed but in contact with the colder tub surface may also be spared (sitting portion of buttocks, bottoms of feet).
    - lighted cigarettes will leave 5mm circular burns, often quickly scabbing, usually found on the palms and soles. These can often be mistaken for impetigo. A culture swab from these lesions can help differentiate a burn from infection.
    - look for identifiable patterns, such as an iron or heater grill.
    - children who grasp a hot object accidentally will have burns on the palm of the hand or volar (anterior) aspect of the fingers

- **Skeletal injuries**
    - Red flag – fractures are not expected in infants who are not yet walking.
    - Red flag – swelling of a body part that is out of proportion to described injury; may indicate an underlying fracture.
    - Red flag – diaphyseal (midshaft) fractures in a child less than 3 years old.
    - Red flag - spiral fractures caused by twisting (torsion) of a long bone.
        - Toddler's spiral fracture of the tibia occurs when a toddler's leg is trapped under his body during a fall, such as getting a leg caught in a couch. This is not abuse!

- Red flag - metaphyseal/ epiphyseal fractures, beyond the newborn period, are virtually diagnostic of abuse; also known as "corner fractures" or "bucket handle fractures"
  - newborns with metaphyseal fractures will usually have a history of a traumatic birth and will show periosteal changes by 7-11 days after delivery; if child is 2 weeks old, with no sign of bony healing, injury should be considered as sustained after birth.
- bony injuries often present with unexplained swelling of an extremity, or refusal to use an extremity or to walk
- posterior rib fractures are the most common area of inflicted rib fractures; can be due to shaking or compressing chest
- anterior or lateral rib fractures are usually due to a direct blow
- callus formation may be the first evidence of fracture; if no rib fracture is seen initially but is suspected, repeat x-rays in two weeks looking for callus formation.
- lateral clavicle fractures associated with violent pulling forces.
- metacarpal or metatarsal fractures, especially if child is non-ambulatory, should be considered the result of abuse.
- estimating age of fracture – fracture with early periosteal new bone is at least 7-10 days old; loss of sharpness of fracture line is 2-3 weeks old; obliteration of fracture line by firm calcified callus is 3-6 weeks old; remodeling or smoothing of callus begins as early as 4months and continues up to 1 year. Infants heal faster than older children; ribs and large long bones are slower to heal; cannot date skull fractures in this manner.

- **Head injuries**
  - Red flag – unexplained or implausibly explained sudden changes in neurological or mental status
  - Red flag – retinal hemorrhages, outside of the newborn period
  - Shaken baby or shaken impact syndrome - intracranial hemorrhages may results from vigorous shaking of the infant, or throwing the child down onto a surface, such as a mattress.
    - infants' skulls are thin and pliable; impacting infants against hard surfaces causes the energy to be transmitted to underlying brain tissue; these *translational* forces cause skull fractures, epidurals, subdurals, and focal brain hemorrhages.
    - shaking infants with large heads and weakened cervical muscles generates *angular* forces; energy is concentrated at the end of head movements; dura-to-cortical blood vessels tear causing subdurals and subarachnoid hemorrhages.
    - infants' nerve axons are poorly myelinated, and they are vulnerable to shearing forces and diffuse axonal injury.
    - secondary injury occurs as intracranial pressure increases, cerebral edema worsens, hypoxia worsens, and cerebral blood flow decreases.
    - many of these infants will present with unexplained seizures or respiratory difficulty due to increased intracranial pressure
    - diagnosis made after CT or MRI shows intracranial bleeding
    - even without an intracranial bleed, massive brain swelling from the shaking episode can cause increased intracranial pressure
    - studies suggest that even significant increases in venous pressure due to squeezing of the chest could cause the same lesions; more recently, it is suggested that impact of the head is necessary to produce the full clinical shaken infant syndrome (Pediatrics 1992 Duhaime AC)
    - intracranial lesions due to shaken baby has 15% mortality and 50% morbidity.

- bruising of the face or ears, or swelling of the scalp (subgaleal hematomas or underlying skull fractures) should be recorded.
- fundoscopic exam may show retinal hemorrhages, which are usually diffuse and superficial and are usually associated with subdural hematomas; newborns can sustain retinal hemorrhages from birth trauma – will resolve in 2-4 weeks; retinal hemorrhages in general do not result from CPR; Tyagi examined 32 infants with seizures and found no retinal hemorrhages;
- *Caida de mollera* – Latin American folk practice of attempting to raise a sunken fontanelle may lead to subdural bleed, retinal hemorrhages and severe brain injury.
- other eye injuries from non-accidental abuse includes hyphemas, lens dislocations, and retinal detachments.
- coagulation studies, again, should be obtained if a suspicious intracranial bleed is diagnosed.

- **Abdominal injuries**
  - just as in accidental trauma, intra-abdominal injuries may present with subtle symptoms, including recurrent vomiting or abdominal pain
  - bruising or even a history of an injury may not be revealed
  - abdominal x-ray may show "double-bubble sign" secondary to a duodenal hematoma
  - injuries include rupture of the spleen or liver, intestinal hematomas or perforations, or injury to abdominal blood vessels

- **Neglect**
  - Physical neglect – failure to provide essentials of survival (food, clothing, shelter)
    - exposes child to physical and emotional dangers, undernutrition or accidental injury
    - deaths related to neglect can outnumber those caused by physical abuse (*The Battered Child 3rd Edition* 1983 Kempe CH)
  - Nutritional neglect – failure to provide adequate caloric and nutritional intake
    - Child does not follow the expected growth curve; weight usually falls farther than height or head circumference
    - must exclude organic causes for the failure to thrive
    - up to 20% cases of failure to thrive are caused by parental ignorance and responds well to education regarding appropriate feeding practices
    - may require hospitalization for the investigation and treatment
  - Medical neglect – failure to seek the medical care required for the child's condition
    - may refuse standard diagnostic tests or treatment, or may be non-compliant with reasonable medical therapy
    - may result from religious beliefs, delusional thinking or negative feelings toward the child
    - "parens patriae" – holds that the state has a paternalistic interest in the welfare of children and will not allow a child's health to be seriously compromised because of limitations or convictions of the parent (J Peds 1983 Holder AR)

- **Poisonings**
  - any drug, like acetaminophen, laxatives, sedatives or alcohols, can be used
  - a parent may force water ingestion causing water intoxication, or deprive water or force salt ingestion to cause hypernatremia
  - massive overdoses in young children is suspicious for abuse; usually, in accidental ingestions, children do not ingest a large amount of the drug.

- "morning after syndrome" – children develop alcohol intoxication, hypoglycemia, and seizures after consuming the drinks left over after a party in the home.
- cocaine found by young children can cause seizures

- **Munchausen's syndrome by Proxy (Polle's syndrome)**
  - Syndrome named after Polle, the infant son of Baron von Munchausen, who died of an induced illness caused by his parent.
  - Munchausen syndrome by proxy is any condition that result from a parent inducing or fabricating an illness in a child
    - parents may inject sugar or infected substances, administer poisons or suffocate their children
    - pneumonia, UTI's, bacteremia, diabetes, seizures and SIDS have all been finally attributed to this syndrome.
    - child's illness is generally meant to attract attention for the parent or caretaker's benefit; harm to or punishing the child is generally not the goal.
    - parent involved is usually the mother, many times abandoned by male figures in her life; she pretends to be a good mother, masquerading as a self-sacrificer; she may become the "ideal parent" in the eyes of health care workers, winning care and respect.
    - persistent or recurrent illnesses that cannot be explained
    - symptoms or signs that only occur when the caretaker is present
    - parent or caretaker having prolonged visits or living in with child while hospitalized
    - standard treatments not tolerated (e.g. IV's that continually come out)
    - parent or caretaker does not seem as concerned as the staff regarding the child's welfare
    - parent or care taker may have some previous medical training
    - bacteremia with polymicrobes and gram-negative organisms
    - history of multiple resuscitations in a child with no known cardiac or pulmonary abnormalities
    - siblings with similar episodes or death
    - usually occurs in kids less than 6 years old (after that, kids are less likely to cooperate with the parent's actions).

PHYSICAL SIGNS OFTEN CONFUSED FOR ABUSE

BRUISING:	**How to differentiate:**
Trauma	History
Hemophilia	PT, PTT, factor VIII and IX assays
Von Willebrand disease	Bleeding time
Vit K deficiency in newborns	History esp. home birth; look for Vit K inj mark on thigh
Vit K deficiency in cystic fibrosis	Malabsorption history
ITP	CBC and platelets
Leukemia	CBC and platelets
Neuroblastoma with periorbital Eccymosis	CT scan
Mongolian spots	Present since birth, will persist, ethnic group
Coining or cupping	History, ethnic customs
Medications	Salicylates ingestion
BURNS, BULLAE, or ERYTHEMA:	
Unintentional burn	History, e.g. unintended splash or hot car seat
Staph impetigo	History, and gram stain and culture of area
Allergic reaction	History
Photosensitivity reaction	History
Herpes simplex or zoster	Scrape to stain lesion and culture
SCARS:	
Ehlers-Danlos syndrome	History
Congenital indifference to pain	History, often mentally handicapped
LOSS OF HAIR:	
Traction alopecia	Hair braids
Tinea capitis	KOH exam and fungal culture
Alopecia areata	Appearance
Seborrhea, eczema	Appearance
SKELETAL PATHOLOGY:	
Trauma or birth injury	History
Leukemia	CBC, platelets, bone marrow
Osteogenesis imperfecta	Family history, blue sclera, bone biopsy, skeletal x-rays
Osteomyelitis	History
Scurvy	Nutrition history, long bone x-rays, rare < 6mo old
Vit A toxicity	Nutrition history, Vit A levels
Rickets	Nutrition history, wrist xray and alkaline phosphate level
Congenital syphilis	Serology and other physical signs of congenital syphilis
Metastatic neuroblastoma	Bone marrow

WHAT LABORATORY or RADIOLOGICAL TESTS SHOULD I ORDER?

• Blood tests - any child with multiple bruises or an intracranial bleed should have a complete blood count, including platelets and differential, and coagulation studies, including prothrombin time and partial thromboplastin time. (used to rule out other causes of bruising such as aplastic anemia or leukemia)

• Urinalysis – hematuria can be found in children who are spanked or paddled where one or more hits has hit the lower back.

• Plain x-rays - skull, chest to include ribs and clavicles, pelvis, long bone to include fingers and toes, and any additional suspected areas of injury should be x-rayed when there is evidence of trauma or abuse is identified by other means

- look also for osteopenia, increased trabeculation or presence of excessive wormian bones in the skull as potential evidence for osteogeneis imperfecta.
- periosteal elevation secondary to new bone formation at areas of previous microfractures.
  - periosteal new bone can be seen as early as 4-10 days after the fracture, and a soft callus can form as early as 10-14 days after injury; a hard callus can appear as early as 14 days and remodeling may begin 3 months after the injury.
- multiple fractures at different healing stages
- unusual fracture sites, such as the ribs, lateral clavicle, sternum or scapula
- repeated fractures to the same area

• Bone scans might be useful when fractures might be suspected but are not yet visible on plain x-rays.

• CT scan of the head is indicated for children with retinal hemorrhages or evidence of acute neurological change

- intracranial hemorrhage, with or without a skull fracture, without a history of major trauma is diagnostic of child abuse until proven otherwise.

• MRI of the head may be used more in the future to identify smaller areas of bleeding and to more accurately determine areas of bleeding over different times.

SEXUAL ABUSE

WHO ARE THE VICTIMS?

• Approximately, 300,000 cases of sexual abuse every year
• College polls have shown 1 out of 4 women and 1 out of 9 men reported being sexually abused as a child, less than 18 years old
• Others have estimated that 1% of children will be sexually abused every year before age 18 years
• 75-90% are female; 10-25% are male
• Younger children are more likely to be abused inside the home; preschool-age children more likely to be abused in the home than in a preschool setting
• Male victims are more likely to be abused outside of the home
• Older children are more likely abused by family members or family friends; 25-50% of adolescent victims are abused by peers
• Custody disputes may result in higher risk of false claims of abuse, but false claims still only occur in a minority of cases

WHO IS AT RISK?

• Child receives poor supervision by a care-taker
• Child wants to please
• Child with physical or mental disabilities is more vulnerable
• Child is threatened with withdrawal of affection or is threatened with force or harm to loved ones
• "Child sexual abuse accommodation syndrome" (Child Abuse and Neglect 1983 Summit R.) describes the finding that abused children are entrapped over time in a "secret arrangement" with a adult or adolescent the child trusts; often the child feels helpless. Accommodation to the abuse is the norm and the child often shows conflict regarding the disclosure. Initial allegations may often be retracted.

WHO ARE THE ABUSERS?

• 90% are males, many abused themselves as children
• 30-60% are known to the child – have a position of trust or authority in the child's life
• 35-40% of cases involved relatives
• 20% of perpetrators are adolescents; 5-10% are even younger

WHAT IS NORMAL BEHAVIOR FOR CHILDREN?

• First, oral gratification, then exploration, self-stimulation, and curiosity amongst peers

SIGNALS OF ABUSE?

• Behavior – aggressive, clinging, insomnia, excessive masturbation, sudden change of behavior, phobias, fears, sexualization of play, attempted suicide
• Physical – abdominal pain, anorexia, constipation, painful defecation, encopresis, pregnancy, rectal bleeding, sexually transmitted disease, urethral discharge, urinary symptoms, vaginal symptoms

In the ideal world, all children requiring an interview and examination for alleged sexual abuse would be cared for at a hospital or clinic designed for that purpose; unfortunately, many of us do not have that referral luxury. Emergency Department staff are called upon to take the histories from children and perform sexual abuse physical exams that will stand up in a court of law. Here are a few practical tips:

THE INTERVIEW?

• Medical history-taking should be separate from the detailed interview regarding the abuse; if there are no other resources in the community, the emergency department may be the only place for the detailed interview regarding the abuse.
• Don't victimize the child TWICE! The initial contact with a healthcare professional can be the first step in the healing process for the child
• Obtain history from caretakers or protective services who are with child; avoid obtaining history in front of child; learn names of relevant people in child's life; learn past medical history; determine what child has been told about coming to the doctor today.
• Develop trust with the child; the child needs to feel he or she is protected; approach will vary depending upon the age of the child; kids believe health care workers are innately trustworthy.
• Ascertain early either from the child or care-taker what names the child used for various body parts and bodily functions.

• Introduce child to exam room; show child equipment like colposcope or otoscope; routine procedures child is familiar with early on, like height and weight and questions about school and home life in general.
• Most ED's will not have a colposcope available; otoscopes have been used by examiners to help magnify genital findings.
• Ask why the child came to see you today; some may have no clue or others might address the abuse concern immediately.
• Ask child to name body parts; can use child's body or drawings or dolls.
• Open-ended questions are best - "Tell me what happened that brought you to the clinic today?"
• Children usually can't give running narratives; may need more framed or focused questions - "Sometimes kids come here because someone has touched their bodies in a way that wasn't okay. Has anything like that happened to you?" or "You said Charlie touched you. Can you tell me about that?", and "And then what happened?"
• Be non-judgmental – avoid saying things like, " Why did you go over to his house?" or "Why didn't you tell your Mommy?"
• Young children think concretely and may not reveal all the information you think you asked for in a single question; in addition to asking "Did he touch you anywhere else?", also ask "Did he touch your _____?" and name many body parts including a few that are not private parts.
• Verify what child means by clothes on or off; it may not mean underwear, bathing suit, or pajamas for example; articles of clothing can be pushed aside, moved around, reached under in sexual acts; clarify with the child rather than assume that it couldn't happen with the clothes on; sometimes kids will consider clothes around their knees as still on.
• Children may not understand what "inside" their genitals, anus or "body" means; they may state that touching occurred "inside" but it may actually have been between the child's thighs or between the

buttocks; they may deny penetration even when they don't really understand the concept; THIS QUESTION IS PROBABLY BEST ANSWERED DURING THE EXAM WHEN THE CHILD'S OWN BODY CAN BE USED AS A REFERENCE. CAN ASK IF THE TOUCH WAS WHERE THE EXAMINER'S HAND ARE.

• Make sure the child understands that you, the physician, view the perpetrator's behavior as inappropriate; the child may see it as playful or "not bad"

• If the child volunteers specific information, record this as a direct quote.

• Young children may give fragmented accounts of the abuse; sequencing of events and time may be difficult for young children; ask timing of events in relation to things child might know, "Who was your teacher in school when this happened?", or "What grade were you in when this happened?", or "Was this before Christmas or after Christmas?".

• Avoid leading questions. If a question can be answered as "yes" or "no", it is probably a leading question. Example - "Billy, your neighbor, did this, right?"

• May be useful to ask what the perpetrator's privates looked like. Any description of ejaculation is especially useful in court.

• Refer to the child's body to learn exactly where he/she was touched; ask the child to point, or ask the child if your examining hands are in the same place where he/she was touched or somewhere different.

• Ask child if it hurt or if there was any bleeding; how did he/she know there was blood? What happened to the sheets/panties/clothes that had blood on them?

• Did perpetrator say anything to victim? Ask child if he/she was told not to tell? What was the child told would happen if he/she told? Did the child tell anyone?

• Asking the child if he or she felt "safe" or "unsafe" may have different meaning for the child; children often express "safety" against fire or kidnapping or "the boogie man"; know that you and the child may not be talking about the same things.

• Ask "Anyone else there when the touching happened?", or "Anyone else ever do that to you?", or "Do you know anyone else that this happened to also?"

• If a child does not answer a certain question, document that the child was asked to give certain information but did not answer; document observed behavior such as affect, body language and emotions, e.g. "She turned her eyes away and looked down when asked……."

• Avoid communicating shock, disbelief, blame, guilt, disapproval, etc; never criticize or correct a child's choice of words.

• Maintain an open line of questioning by frequently reinforcing responses with "Tell me more about that?" or "And then what happened?"

• Information should also be obtained regarding other kinds of abuse, family violence or any other significant medical problems.

• Do not be confused if the child recants the history of sexual abuse; this can often result from fear, parental coaching, response from authority figures, or the child realizing that disclosure may result in a parent or loved one going to jail or family separation.

• Know when to stop; you can make a mess of the case by pushing too far; watch for signs in the child that he/she has had too much.

PHYSICAL EXAM?

• If the abuse is greater than 72 hours prior to presentation in the ED, the child can be referred to a child crisis center, if available, for the interview and evaluation !!

• Explain the exam to the child; a supportive adult (not the perpetrator, though) should be with the child throughout the exam. Constant reassurance during the exam is important.
• However, some experts believe in the benefit of a child undergoing the process alone (without parent or caretaker but with supportive adult), this disables the defense's claim that the caretaker's presence influenced the child's statements; enables the child to disclose without concern about effects of statements on caretaker.
• A thorough physical exam should be performed; document the developmental status of the child and emotional state at the time of the exam; a thorough exam reassures the child that he or she has been examined by a health care professional and is OK.
• Pay specific attention to the mouth, breasts, genitals, perineal area, buttocks and anus
• Anesthesia needed for an exam is rare – used if child is unable to cooperate and there is concern for serious injury or rapid collection of forensic material
• Any abnormal findings should not be reported in front of the child; reassurance that the child is believed and not at fault is much more important.
• Avoid engaging in extensive games or play to accomplish the examination; often "game playing" is the approach used by abusers.

• Place child comfortable position:
- on caretaker's or supportive adult's lap
- supine in frog leg's position
- supine with knees drawn up in knee-chest position
- prone in knee-chest position – "like a kitty-cat stretching"; may make the child feel vulnerable

• Speculum or digital examination of the vagina is rarely necessary except in older or sexually active children.
• Cultures or specimen collection should be taken using the smallest swabs possible.
• In the frog-leg position, moderate traction on the labia majora downward and outward will allow better visualization of the hymen and vagina

• **Tanner Staging**

Pubic Hair

Stage 1: Preadolescent. No pubic hair. Hair fine, like over other areas of the body
Stage 2: Appearance of few, long, lightly pigmented hair. Straight or curled hair develops at the base of the penis or along the labia
Stage 3: Hair increases in density, becomes more coarse, curled and darkens in color; hymen now estrogenized and becomes thickened and redundant.
Stage 4: Hair of adult color and texture, but covering a smaller area, with no spread to the medial thighs
Stage 5: Adult-like pattern

Breast Development

Stage 1: Preadolescent
Stage 2: Breast bud stage
Stage 3: Further enlargement and elevation of breast areola
Stage 4: Projection of areola and papilla to form secondary mound above the level of the breast
Stage 5: Adult stage, projection of papilla only, areola even with breast

Male Genitalia

Stage 1: Preadolescent
Stage 2: Enlargement of scrotum and testes, without enlargement of penis, scrotum reddens, and changes texture
Stage 3: Continued enlargement of scrotum and testes, now with lengthening of penis
Stage 4: Increase in size of penis and glans
Stage 5: Adult stage

DOCUMENTING FINDINGS

• Significant differences can be found in the appearance of normal genitalia depending upon the position and degree of relaxation of the same child.
• In general, only findings that clearly indicate scarring from trauma, active infection or changes in reflex responses that is consistent are considered definite signs of abuse.
• Pre-printed medical records specifically for child sexual abuse exams has been shown to improve documentation
• Be sure to document the following points -
    • position patient was in during the exam – supine frog-leg, supine/knee-chest or prone/knee-chest and when during exam.
    • document Tanner staging
    • document genital mucosa - prepubertal = orange/red, adolescent = pink
    • document hymenal appearance -
        • Describe the hymenal membrane shape and its thickness (see below for shapes); describe any edge abnormalities and their location as related to the face of a clock; describe edges as thin or fine, defects - shallow or deep, elevation, bump, cleft, notch, indentation, divot
        • describe any scarring, incr vasularity, tears, notches, bruising or hematomas
        • comment if ran edges of hymen with wet q-tip or squirted with saline
        • Optional - measure the hymenal opening at its widest diameter, both lateral and anteroposterior; again, many experts feel that diameter measurements of hymenal openings may not be necessary;
        • Congenital absence of the hymen does not exist.
        • Describe the posterior forchette and presence of scars, tears, lacerations, etc
        • Speculum exam generally not used in pre-pubertal girls; if appropriate, describe speculum size, mucusa, discharge, cervix
        • Arch Ped Adol Med 1997 SP Starling - In adolescents with estrogenized, redundant hymen, may use a 12 or 14 g Foley catheter balloon to maximize visualization; moisten catheter tip with water; gently insert catheter into vagina and inflate balloon with 10cc

saline; assistant applies gentle labial traction; examiner applies gentle traction on balloon in different directions will allow visualization of all areas of the hymen; ensure balloon is inflated with 10cc otherwise it may pull through hymenal opening and cause pain; allow patient to feel the softness of the catheter prior to insertion.

• Describe anal exam for sphincter tone, anal rugae (normal or flattened), tears, skin tags, scars; examine for anal wink positive or negative.

• Describe penis exam for tanner stage,, circumcised or not, redness, edema, discharge, bruising, exam of testes

• If the vaginal canal can be visualized, describe its general appearance, rugal folds, or any scars.

• Look carefully for foreign objects within the vagina, such as toilet paper, hair, or other material.

• Color photography to document findings is highly recommended; Fine-detailed, close-up ability is highly preferable; if no photography is available, draw a picture.

• *Be meticulous about documenting findings*; recall of findings months or years later when the case finally goes to court, without good original documentation, may be difficult

NORMAL GENITAL FINDINGS (sometimes confused with abuse)

• imperforate hymen – appears as blue-domed mass at puberty - rare

• annular hymen – thicker with tissue circumferentially around the introitus; 80% of neonates in Berenson's study

• fimbriated hymen or redundant - appears sleeve-like; 20% of neonates in Berenson's study

- normal newborn hymen is generally estrogenized thick and redundant (fimbriated); by age 3, most have developed an annular or crescent shaped hymen; as child approaches puberty, hymen becomes estrogenized, thickened and redundant.

• crescent hymen – missing tissue in superior portion and thinner

• septated hymen - bands of tissue connect the hymenal edges together

• distal vaginal atresia or a vaginal septum – associated with other urogenital abnormalities

• vaginal opening diameter – 273 cases of non-abused, prepubertal girl found vaginal openings > 4mm rare (Amer J Dis Child 1989 Goff CW)

- many experts now moving away from measuring vaginal opening diameters because of the variability of size depending upon position of the child and degree and time of labial traction

• ambiguous genitalia

• urethral prolapse – more common in African-American girls – will appear as a donut around the urethral meatus; can catheterize urethra to prove urethra is central; treat with Sitz baths and estrogen cream.

INJURIES or DISEASES (sometimes confused with abuse)

• Genital or anal **erythema or pruritis**

• fecal or urine contamination, tight clothing, chemical irritants like bubble-bath soaps

• atopic dermatitis, lichen sclerosis, scabies, nonspecific vaginitis, pinworms, perianal streptococcal cellulitis, inflammatory bowel disease, Kawasaki syndrome

• Genital or anal **bruising**

- straddle injuries – bicycles, balance beam, or jungle gym – hymenal membrane should be intact but bruised labia majora, minora or periurethral area is common
- motor vehicle accidents, impaling injuries
- lichen sclerosis, phytodermatitis, bleeding disorders, vascular nevi, Mongolian spots

• Genital or anal **bleeding or discharge**

- foreign bodies within vagina – toilet tissue
- atopic dermatitis, seborrheic dermatitis
- precocious puberty, hormone producing tumors, vaginal polyps, vulvar hemangioma, sarcoma botryoides
- leukorrhea, vulvovaginitis, varicella, measles, scarlet fever, typhoid
- ectopic ureter or other congenital genitourinary abnormalities, recto-vaginal fistula
- phimosis, paraphimosis, hair tourniquets, hematocolpos, mucocolpos

FINDINGS OF ABUSE?

• **Likelihood of finding evidence of abuse on physical exam:**

- whether force was used
- size and age differences of the perpetrator and victim
- whether a foreign object was placed or forced into the mouth, vagina, or anus
- position of the child and if lubricant was used
- whether the child resisted
- type of abuse and frequency
  - Pediatrics 1992 J McCann - children with genital injuries from abuse were found to heal rapidly and have little scar formation; irregular hymenal edges and narrow rims at the point of injury were the most persistent findings

• • A normal physical exam is often found!

• • A normal physical exam can be consistent with abuse !!

- absence of physical findings does not hinder the ability to obtain a convictions

• • Arch Peds Adol Med 1996 JA Adams examined 204 adolescent girls who reported penile-vaginal penetration by abuse; only 32% had any physical findings; the hymen is an extremely elastic tissue.

FINDINGS DIAGNOSTIC OF <u>ABUSE</u>

- presence of sperm, semen, or acid phosphatase in a prepubertal child
- presence of sexually transmitted disease with no reasonable possibility of non-sexual transmission (syphilis, gonorrhea, HIV)
- witnessed or photographed sexual abuse

FINDINGS DIAGNOSTIC OF <u>PENETRATION</u> AND CONSISTENT WITH A HISTORY OF SEXUAL ABUSE

- healed or fresh vaginal tear
- scarring, tears, or distortion of hymen, especially in the POSTERIOR half, at the 6:00 position.

- notches or clefts in the ANTERIOR half of the hymen may develop normally as the hymen evolves during infancy from fimbriated or annular to crescent form.

• decreased or absent hymenal tissue, especially in the posterior half – use this instead of hymenal opening diameter
- all females are born with a hymen; no children have been born with an absent hymen.
- McCann 1990 and Berenson 1995 both found normal children with a posterior hymenal rim size of at least 2mm at 6:00 position (most inferior portion); conservatively, if hymenal rim inferiorly is <1mm, this should be suspicious for abuse.

• fresh or healed rectal tears or scars
• scarring of fossa navicularis
• loss of anal rugal pattern, loss of anal sphincter tone, anal dilation without stool present (>20mm), anal edema, increased perianal pigmentation, anal venous congestion, anal skin tags
- 66% of children with history of anal penetration had normal exams (Amer J Ob Gyn 1989 Muram D)
- reflex anal dilation alone found in 49% of non-abused children (Child Abuse and Neglect 1989 McCann J)
- some experts disagree with the concept of stool-presence causing anal dilation in a child, unless child is about to move his bowels – Child Abuse & Neglect 1995 CJ Hobbs

FINDINGS DIAGNOSTIC OF <u>GENITAL or ORAL TRAUMA</u> AND CONSISTENT WITH A HISTORY OF SEXUAL ABUSE

• injury or scarring of fossa navicularis, posterior fourchette or perihymenal tissue
• scars or tearing of the labia minora
• enlargement of the hymenal opening diameter - >4mm – very controversial !
• chafing, bruising, bite mark or scars to the genital region or anus
• presence of other sexually transmitted diseases that are not exclusively sexually transmitted such as herpes or chlamydia
• tears to oral frenulum or palatal petechiae
• abrasions, chafing or bruising to medial thighs, bite marks to thighs or breasts

• *intentional* injuries – often result in injury to posterior structures – hymen, posterior fourchette, fossa navicularis, and the rectum
• *unintentional* (accidental) injuries – like falls or straddle injuries – often result in injury to anterior structures – labia majora or minora, or periurethral area

FINDINGS THAT <u>NEITHER NEGATE NOR SUPPORT</u> AN ALLEGATION OF SEXUAL ABUSE

• redness or irritation of the genital area
• labia majora agglutination
• vascular pattern variations without other scarring
• enlarged hymenal opening; again, opening diameter can vary depending upon position or relaxation of the child and traction of the labia majora
• Decrease in hymenal tissue without scarring
• vaginitis not due to a sexually transmitted disease

CAN I MAKE A DEFINITIVE STATEMENT OF ABUSE?

• If the history and physical exam are not definitive of abuse, a "yes" or "no" answer to the question "Has this child been sexually abused?" is many times not possible
• The physician or examiner may conclude that the exam:
- is diagnostic of abuse
- is consistent with sexual abuse
- neither confirms nor negates the allegations of abuse

WHAT TESTS SHOULD I ORDER?

• Routine cultures of all sexually abused children for sexually transmitted diseases is not generally recommended by experts. However, it should be considered in the adolescent / post-puberty patient.
• Need to consider the presence of symptoms or discharge, the type of alleged contact, and the incidence of STD's in the adult population in the area.
• If the child has active signs of infection, cultures should be obtained.
• All menstruating females should have a pregnancy test performed.

Gathering evidence:

• the best persons to gather forensic evidence are persons previously trained on evidence collection; ED's may select certain physicians and / or nurses to train in forensic collection.
• pre-read the instructions and checklist that is usually contained in the evidence collection kits; these kits are either stored in ED's or obtained from law enforcement agencies
• follow all the instructions; the instructions are there to help you
• label all slides, swabs, containers, boxes with origin of specimen, date, time, and initials.
• maintain a chain of evidence; limit the number of people who handle the evidence
• any dried secretions on the skin should be removed with a cotton swab slightly moistened with drops of sterile water
• use cotton-tipped or small Dacron swabs for all specimen collections.
• oral cavity – swab under the tongue and inside the cheeks – get two specimens from each area
• vagina – AVOID TOUCHING THE HYMEN IF POSSIBLE ! The hymen is very sensitive (painful) in young children.
- Imagine playing the game "OPERATION", a game in which a player has to pull out a small plastic piece from a metal cavity without touching the sides of the metal cavity.
- to culture the vagina, use a moistened swab placed in the vaginal opening for 60 seconds, avoiding touching the hymen itself. Or using a 3cc syringe connected to an intravenous catheter, inject 2cc normal saline into the vagina and re-aspirate the saline using the intravenous catheter and syringe.
- in young children, GC and chlamydia produce vaginal infections, not cervical; culturing of cervix not necessary.
• rectum – use a moistened cotton swab inserted ½ inch beyond the anus.
• if child has a vaginal or urethral discharge, be sure to also culture the rectum and vagina
Arch Peds Adol Med 1995 RA Sicoli and other studies have found children with discharge positive for GC also more likely to have oral or rectal cultures positive for GC, even if asymptomatic in those areas.
• let all specimens air dry for 60 minutes, including child's underwear if abuse is acute.

• STD's should be tested using definitive diagnostic methods such as culture or possibly DNA probes.
• avoid using immunoassays or DFA tests for Chlamydia in child sexual abuse exams
• wet-mount exam should be done on any genital or anal discharge
• dark-field exam should be done on any genital ulcer; routine serological tests for syphilis should not be done unless there is clinical indication
• recent study by Santucci KA 1998 shows using Wood's lamp to identify semen by fluorescence is very unreliable
• HIV transmission is uncommon, but can occur, with sexual abuse; routine testing for HIV is not recommended but should be available for high-risk cases or upon request by care-taker.

SHOULD I TREAT FOR SEXUALLY TRANSMITTED DISEASES? DO ALL "STD'S" FOUND ON CHILDREN INDICATE ABUSE??

• CDC statement on sexual abuse – "The identification of a sexually transmissible agent from a child beyond the neonatal period suggests sexual abuse"
• Pediatrics 1983 ST White found 13% of the sexually abused children studied had STD's – 11% gonorrhea, 1.5% syphilis, 1% trichomoniasis, 0.7% condyloma acuminata; < 10% had any physical evidence of abuse; reportedly 20% with GC were asymptomatic by history (but physical exam findings not reported).
• Arch Ped Adol Med 1995 RA Sicoli examined 422 kids, only 316 fully cultured; found GC rate 2.2% = 7 children; all 7 had vaginal or urethral discharge; 100% sens, 100% NPV.
• Arch Dis Child 1998 AJ Robinson found prevalence of 3.7% for STD's in potentially sexually abused children; all the girls with gonorrhea or trich, and 2 of 3 girls with chlamydia had vaginal discharge.
• Estimates of STD's in sexually abused children ranges from 3-20% or more; incidence of STD's is determined by the type and frequency of the sexual contact, the child's age, the prevalence of STD's in the adult population in the area, and the number of children who are referred for evaluation of possible sexual abuse.

• Remember, if abuse is acute and penile-vaginal abuse was related by the victim, treat post-menarchal females with post-coital hormones – 2 Ovral within 72 hours of sexual contact and then 2 additional Ovral 12 hours later; or 4 Lo-Ovral 1st and then 4 additional Lo-Ovral 12 hrs later also thought to be effective. (this is given after checking a pregnancy test)

• *Routine prophylactic treatment of sexually transmitted diseases, in the absence of any clinical evidence of infection, is generally not recommended for young children*

Gonorrhea
• Rates of infection vary from 2.5-30%
• Incubation period 2-7 days; symptoms may last 8 weeks; asymptomatic carriage may last 6 months.
• Rectal and pharyngeal GC is almost always asymptomatic.
• In prepubertal children, GC usually causes vaginitis; PID is rare; pharyngeal and rectal infections are usually asymptomatic.
• Cultures using Thayer-Martin or chocolate blood agar-based media to confirm diagnosis are preferred in children; DNA probes or enzyme immunoassays are unreliable in children; confirmatory

tests necessary to differentiate from N.meningitidis, N.lactamica, and N.cinerea all of which can be normal oral flora.
• If culture positive for GC, MUST BE REPORTED; SEXUAL ABUSE IS CERTAIN !
• Treatment - Ceftriaxone 125 or 250 mg IM or
Erythromycin 30-50 mg/kg/day for 10 days
Ciprofloxacin 500 mg PO or Ofloxacin 400 mg PO for adolescents
Cefixime 400 mg PO

Syphilis
• Caused by *Treponema pallidum*
• Occurs in 1% of abused children
• If non-treponemal tests are positive (VDRL or RPR), then specific treponema tests (FTA-ABS or MHA-TP) must be used to confirm
• If culture positive for syphilis, MUST BE REPORTED; SEXUAL ABUSE IS CERTAIN
• Treatment – Benzathene penicillin – for young children, 300,000-600,000 units IM x 1
for children >30kg, 900,000 units IM x 1
plus Probenicid 1 g PO

Chlamydia
• Perinatally acquired infections can be seen up until age 3 years old
• Occurs in 4-8% of abused children, usually asymptomatic
• Cultures or PER to confirm diagnosis are preferred in children; enzyme immunoassay (Chlamydiazyme) or direct fluorescent antibody (MicroTrak) are unreliable in children
• If culture is positive for chlamydia, MUST BE REPORTED; SEXUAL ABUSE IS PROBABLE
• Treatment – Erythromycin 30-50mg/kg/day for 10 days
Azithromycin 1 gram PO for adolescents
Doxycycline 100 mg PO BID for 7 days for adolescents

Herpes (Herpes Simplex Virus)
• HSV-1 or HSV-2 can be found in the oral or genital areas
• True risk of acquiring from abuse is unknown
• If viral culture is positive for HSV-2, or HSV-1 in the genital region, MUST BE REPORTED; SEXUAL ABUSE IS PROBABLE
• Treatment – in adolescents, Acyclovir 200 mg PO 5 times per day for 10 days

Trichomoniasis
• Cause by *Trichomonas vaginalis*
• Not usually seen in prepubertal girls; can be found in neonates who acquire it during delivery; prepubertal vaginal environment lacks glycogen and has a relatively high pH and is not conducive to Trich growth; literature very unclear regarding non-sexual transmission, but thought by most experts to be related to sexual contact.
• Diagnosed by wet mount of vaginal discharge
• If culture is positive for trichomoniasis, MUST BE REPORTED; SEXUAL ABUSE IS PROBABLE
• Treatment - Metronidazole 15 mg/kg/day (max 250 mg) tid for 7 days; or if an adolescent, 2 g PO

HPV (Human Papilloma Virus)

• *Condyloma acuminata* cause anal and genital warts; uncommon in children
• Studies estimate 11-80% of sexually active young women have HPV and are asymptomatic.
• Other modes of transmission are neonatal vertical transmission, and auto- or heteroinoculation from hand warts (e.g. diapering of children may transfer HPV to child)
• Pediatrics Jan 1998 E Siegfried found in 40 children seen for probable or confirmed sexual abuse only 2 (5%) patients were positive for HPV (type 16); none had condyloma lesions.
• HPV types 6 and 11 most commonly cause anogenital, visible, exophytic warts; type 1-4 typically cause hand infections; type 16,18, 31,33, and 35 are assoc with cervical dysplasia, most often detected by pap smear or colposcope.
• may need to biopsy in order to confirm diagnosis
• If culture is positive for HPV and is not perinatally acquired, MUST BE REPORTED; SEXUAL ABUSE IS PROBABLE
• Treatment – by dermatologist, Podophyllin 10-25% applied topically, leave on lesions for 1-4 hours, then bathe; reapply once per week for 4 weeks; laser surgery or cryosurgery also may be used

Bacterial vaginosis

• Caused by *Gardnerella vaginalis* or other anaerobes
• Vaginal discharge is commonly a thin, yellow consistency; diagnosis confirmed by wet mount showing clue cells (epithelial cells covered by bacteria); 10% KOH applied to secretions will release a fishy odor; pH of discharge is >4.5 (prepubertal children have alkaline secretions normally so pH is unreliable).
• Bacterial vaginosis an be found in virginal adolescent girls – Am J Ob Gyn 1988 RC Bump et al
• If wet mount positive for Gardnerella, CASE MAY BE REPORTED IF THE HISTORY OR OTHER FINDINGS INDICATE SEXUAL ABUSE
• Treatment – Metronidazole 15 mg/kg/d tid for 7 days

Hepatitis B

• Treatment – if not vaccinated, Hepatitis B immune globulin 0.06 ml/kg IM within 14 days of exposure, and then administer Hepatitis B vaccine; if fully vaccinated, re-vaccination not necessary; if vaccinations unclear, send serology for immune status and treat if necessary

HIV (Human Immunodeficiency Virus)

• If Elisa test is positive, must be confirmed by Western blot
• Testing recommended for repeated abuse or multiple abusers, if perpetrator is known to be HIV+ or has HIV risk factors, or if case is in high HIV prevalence area
• Test again in 3 and 6 months
• If neonatal, needle or blood transmission has been ruled out, then case MUST BE REPORTED; SEXUAL ABUSE IS DEFINITE.

TESTIFYING IN COURT

• Because of the likelihood of civil or criminal court action, detailed records, drawings and/or photographs should be kept as part of the medical record and submitted to the protective agencies.
• Physicians who are required to testify are better prepared and will feel more comfortable if the records they kept are accurate and complete; the more detailed the records are and the more explicit the physician's opinion, the less likely the physician may need to testify in court.
• In both criminal and civil proceedings, physicians must testify to their findings "to a reasonable degree of medical certainty".
• Increasing number of alleged sexual abuse cases involve parents who are in the process of divorce and who allege abuse during custody visits; remember, the American Bar Association states that the majority of divorces do not involve custody disputes, and relatively few custody disputes involve allegations of sexual abuse.

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