Normal Pre-Pubertal Anatomy and The Pre-Pubertal Genital Examination

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Who am I?
- Board Certified General Pediatrician and Board Certified in Child Abuse Pediatrics
- Will provide any support necessary for inpatient or outpatient cases to local physicians

What are child abuse specialists?
- Now over 20 University supported fellowship programs in the country
- Are officially a Board Certifiable sub-specialty of Pediatrics (since November 2009)
- Able to support physicians for physical and sexual abuse, neglect, Munchausen's and other related child abuse cases.
Why talk about abuse?

- You are mandated reporters:
  - Who Must Report?
    - Physicians, including hospital interns or residents; dentists; podiatrists; practitioners of limited branches of medicine or surgery; registered nurses; licensed practical nurses; visiting nurses; other health care professionals; speech pathologists; audiologists; coroners
  - Under What Conditions?
    - When they are acting in their official or professional capacities and know or suspect that a child under 18 years or a mentally retarded, developmentally disabled, or physically impaired child under 21 years has suffered or faces a threat of suffering any physical or mental wound, injury, disability, or condition of a nature that reasonably indicates child abuse or neglect.

Why talk about abuse?

- Unfortunately, failure to report is a crime.
  - "Two local physicians charged with felony for failure to report child abuse." Detroit, 2003
  - "Nurse charged with two counts of misdemeanor failure to report child abuse in Greene County, Missouri." 2003
  - "Jury awards $5 million in damages after finding that three doctors failed to detect symptoms of child abuse in an infant who was later permanently disabled." Washington DC, 2004

What to know about child sexual abuse.

- General practitioners should examine male and female genitalia at every well child exam
  - Reason 1: Believe it or not, genitalia is as prone to abnormalities as other body parts (even girl parts!!!)
  - Reason 2: 1% of all office complaints involved vaginal pain, discharge or dysuria
  - If you don’t know what you’re looking at you can’t make an accurate diagnosis
  - Pre-pubertal girls DO NOT get yeast infections as a general rule
  - Reason 3: Kids who have never been examined will hate being examined when they have a true problem
  - Reason 4: Knowing what the genitalia looks like helps differentiate previous abnormalities from new trauma (i.e. abuse)
What to know about child sexual abuse.

- 20% of adult women in the U.S. have experienced sexual abuse.
  - 20 retrospective studies
- Male sexual abuse is estimated at 7%.
  - Finkelhor estimate
- Of the 63 million children in the U.S., ½ million are sexually abused.
- 500,000 children/year are abused.

Examination Techniques

- Frog-leg position
- Knee chest position
- Labial traction

Frog Leg Position
Q-tip® examination technique

Foley Catheter Technique

Colposcopy
- A tool for magnification and photodocumentation
- Does not see what is not there
- An experienced examiner will be able to determine most abnormalities without colposcopy
- Excellent for tracking healing injuries
- Optimal for teaching and research
Normal Anatomy

- Labia Majora and Minora
- Clitoris
- Urethra
- Periurethral or perivestibular bands
- Perihymenal sulcus
- Hymen
- Vagina

Normal Anatomy Continued

- Posterior fossa
- Posterior fourchette
- Perineum
- Anus
Changes in appearance: Frog-leg and knee-chest positions

Hymenal Morphology

- Annular
  - hymen is present 360 degrees around vaginal opening
Hymenal Morphology

- Crescentic-
  - Variable insertions anteriorly
  - Hymen present only in posterior aspects
  - Most common type in prepubertal girls
Hymenal Morphology

- Redundant-
  - Abundant hymenal tissue that folds back on itself or protrudes

Redundant Hymen
Hymenal Morphology

- **Cribriform**
  - Hymen with multiple small openings

**Cribriform hymen**

Hymenal Morphology

- **Septate**
  - Band of hymenal membrane transverses creating two or more orifices
Septate Hymen

Hymenal septum
Hymenal Morphology

- Imperforate-
  - Hymenal membrane with no opening

Imperforate Hymen
Mythology of the Hymen:
- Girls can be born without a hymen
- It is always injured with sexual contact
- It is not resilient
- It cannot heal
- It’s presence is proof there has been no penetration (however slight)

Developmental Changes of the Hymen
- Infancy:
  - Maternal estrogen effect
  - Redundant and thickened
- Prepubertal:
  - Most common morphology: Crescentric
  - Thinned and translucent
  - Can be redundant
- Pubertal:
  - Thickened and redundant

Normal Hymen in Infant
Normal Findings
- Periurethral or vestibular bands
- Longitudinal intravaginal ridges or columns
- Hymenal Tags
- Mounds, bumps on hymenal rim
- Linea vestibularis
- Notch in superior half of hymen (3-9 o’clock, patient supine)
- External hymenal ridges

Urethral Support Ligaments

Hymenal Tag
Hymenal Mound at 7 O’Clock with Longitudinal Intravaginal Ridge

Longitudinal Intravaginal Ridge

External Hymenal Ridge
Normal Variants
(not a complete list)
- Septate/cribriform/imperforate hymen
- Failure of midline fusion (perineal groove)
- Groove in the fossa in prepubertal child

Failure of midline fusion

Findings Non-Specific for Abuse
(not a complete list)
- Erythema (of vestibule or peri-anal)
- Increased vascularity of vestibule
- Labial adhesions
- Vaginal discharge / bleeding
The Emergent Examination

- Sexual Assault within 72 hrs
  - Particularly when forensic evidence may be present
  - Most likely will need a full rape kit
- Emergent symptoms
  - Bleeding (anal or genital)
  - Discharge
- History / signs of injury
  - bruising, abrasion or laceration

Non-Emergent Examination

- Sexual assault greater than 72 hours or no forensic evidence collection indicated
- No acute injury, discharge or bleeding

- Best done by a child abuse professional in a controlled setting
  - 80% of examinations meet this criteria

Why a Child Abuse Expert?

- MOST Pediatricians, FP’s and ER docs are inexperienced at this....
  - More than half of primary care physicians could not identify major parts of a female child’s genital anatomy
  - More than half could not recognize clear evidence of chronic sexual trauma

Ladson et al AJDC 1987
Why a Child Abuse Expert?

- ER docs just as bad...
  - Study at Cincinnati Children’s Hospital 1994-1998
  - Enrolled 46 kids thought to have chronic abuse findings on exam by ER doctors
  - Follow up exams done by Child Abuse center docs found only 8 had clear evidence of abuse
  - 32 kids had normal exams
  - The rest had non-specific findings
    - Makoroff, et al, Child Abuse and Neglect 2002

TOP 10 BAD THINGS A DOCTOR UNPACKED TRAINED IN CHILD SEXUAL ABUSE MAY DO

10 - Uses the term virginal or intact to describe the hymen
9 - Does not recognize the importance of a prompt exam in cases of sexual abuse
8 - Believes that only female attending physicians should do genital examinations
7 - Uses a speculum to exam the genitalia of pre-pubertal girls

6 - Calls the abuse MD on call just to let them know "Hey, the exam was normal"
5 - Collects forensic specimens on all children who were assaulted within the previous 3 days
4 - Says 'this child was abused because she has no hymen'
3 - Believes they can tell if an adolescent has had sex by an examination
2 - Completes the GU exam in under 3 seconds
1 - Tells the prosecutor that they don’t testify