Sexual Assault: The Medical Evaluation & Forensic Evidence Collection

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Disclosure

• I have no relevant financial relationships with the manufacturers(s) of any commercial products(s) and/or provider of commercial services discussed in this CME activity

• I do not intend to discuss an unapproved/investigative use of a commercial product/device in my presentation.
Objectives

• Discuss potential findings on physical exam and how to interpret them in the context of child history

• Understand when evidence collection is indicated

• Describe technique for evidence collection

What happens during a medical eval?

• HISTORY
  • Physical symptoms
  • Behavioral (emotional) symptoms
  • Past medical history, social history, [sexual history], immunizations, medications, allergies
  • History of present illness (DISCLOSURE)

• PHYSICAL EXAM

• SPECIMEN COLLECTION (labs, kit)
Medical provider takes medical history

History + Physical → Impression + Plan

• Child’s history is obtained in a non-judgmental, empathetic manner

• Discussion is consistent with the child’s developmental level

• Non-leading, open ended questions are used

• History is documented accurately
  - (preferably verbatim, at least with quotes around pertinent data)
History example #1

• 7 year old female reports that mother’s boyfriend performed penile-vaginal contact, fondling and kissing repeatedly.

History example #2

• HAS ANYONE EVER TOUCHED YOU ON YOUR PRIVATE PART? "It did not feel good."

• WHO WAS IT WHO DID THAT? "NAME." (name of mother’s paramour)

• WHAT DID “NAME OF AP” TOUCH YOU WITH? “His hands, that's all. And his butt, his mouth. His breath smells like poop. How could my mom like someone with breath like that? He kissed my sister for a very long time. He puts his tongue all over my teeth. Isn't that gross?"

• I HAVE A QUESTION ABOUT SOMETHING YOU SAID. HOW DID HE TOUCH YOU WITH HIS BUTT? "It looks like a bat, but it's big and fat, then there's this round thing in the middle - it's like, like he has three legs. I imagine he's an alien. Probably."
When should a child be referred for medical evaluation?

• **Anytime** there is contact of the child’s genital or anal area, skin to skin or with object.

• If there is oral sex performed on the child or perpetrator (genital or anal).

• The child does **NOT** have to describe penetration.

• Concern a limited disclosure has been provided, or even when recantation occurs.

Physical exam
The Hymen!

The Hymen – the Mythology
The Hymen – Mythology

• The opening to the vagina is covered at birth

The Hymen – Mythology

• The doctor can tell by looking if patient has been assaulted
The stuff we do know

• Every normal baby girl is born with a hymen

• If the hymen has no opening, that is abnormal

• Configuration may change over time

How to find the anatomy

Knee-chest position

How to Find the Anatomy

• Labial Separation

• Labial Traction

Childabusemd.com/physical-exam/genital-exam.shtml
**Points of a good physical exam**

• Was is documented in detail? A thorough examination should include documentation of the appearance of the labia majora, the labia minora, the hymen, the perihymenal tissue, the perineum, the anus, and the buttocks.

• Were photographs taken?
  - Ideally with colposcope.

• Does the examiner routinely participate in peer or expert review?

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**Anatomy-Quick Review**

- Urethra
- Hymeneal rim
- Clitoris
- Hymen
- Labia minora
- Anus
- Posterior fourchette
Main Hy-Points

• Tanner Staging
  - I, II, III - shaved

• Estrogenized or Unestrogenized?
Main Hy-Points

• Tanner Staging
  - I, II, III - shaved

• Hormone Effect
  - Unestrogenized or Estrogenized?

• Configuration
  - Typically, crescentic or annular

Configuration
Crescentic or Annular
Main Hy-Points

• Tanner Staging
  - I, II, III - shaved

• Hormone Effect
  - Unestrogenized or Estrogenized?

• Configuration
  - Typically, crescentic or annular

• Injury

Variations in the Hymen
The Anal Exam

What are we looking at?
What are we looking at?

[Image of a medical procedure or examination]
What are we looking at?

What we know about anatomy

• “It’s normal to be normal”
“It’s normal to be normal”

• 5 year period, 2384 children were referred to a tertiary referral center for possible sexual abuse

• Referred after disclosure of abuse, because of behavioral change, exposure to an abusive environment, and because of possible medical conditions

• 68% of the girls and 70% of the boys reported severe abuse, defined as penetration of the vagina or anus

• 36.3% of all children had a normal medical examination

What we know about the anatomy

• “It’s normal to be normal”

• “Normal” does not mean “nothing happened”
“Normal” does not mean “nothing happened”

- Review of the cases of 36 adolescents who were pregnant at the time of exam, or shortly before the exam
  - Avg age 15 years
  - 1 was pregnant with second child, 1 had a miscarriage, 1 had an abortion
  - ONLY 2 patients had definitive findings of penetrating injury

Why is this so? – Possible explanations

- Penetration does not always cause injury
- Acute injuries may occur, but then heal completely
- This type of tissue is made for this type of contact - once puberty hits
- Disclosure is often delayed
What was that?

• *Lichen sclerosus et atrophicus*

• Skin condition in which the vulvar skin becomes thin, itchy, easily damaged

• Results in raw appearance, bleeding, and blisters which may become blood-filled

• Not abuse!

Car accidents

Pediatrics

How does this happen?

- Increase in pressure inside of the abdomen leads to rupture out of the anogenital area

- Traction from the tire rolling across the anogenital area causes tearing of external structures

Mimics of Sexual Abuse
Behcet’s Disease

• Autoimmune condition that causes painful genital sores

Mimics of Sexual Abuse
Other mimics

• Various infections of the vaginal tissue can mimic trauma because they cause bleeding and swelling

Normal vs. Abnormal

• Why do an exam if it is highly likely to be normal?

• Is the victim a virgin?
FORENSIC EVIDENCE COLLECTION KIT
What is the yield of a kit (FEK)?

• Review of 273 prepubertal children in Philadelphia with medical evaluation and FEK completion

Conclusions of this study:

• Swabbing the child’s body for evidence may not be helpful after 24 hours.

• Clothing and linens yield the majority of evidence and should be pursued vigorously for analysis.
Collection of evidence beyond 24 hours post assault:

• 277 evidence-collection kits were reviewed from the Houston Police Department Crime Laboratory. All kits were from children 13 years or younger.

• 222 kits (80%) had 1 or more positive laboratory screening test, of which 56 (20%) tested positive by DNA.

The Time to evidence collection for kits testing positive for DNA:

- < 24 hrs for 30 (54%) kits
- 25-48 hrs for 9 (16%) kits
- 49-72 hrs for 3 (5%) kits
- 73-96 hrs for 2 (4%) kits
Conclusions of this study:

• Body samples should be considered for children beyond 24 hours post assault.

• Overall, children <10 with positive DNA evidence, the source was more likely to be from a non-body specimen.

  - This further supports the collection of clothing and linens.

What we can conclude from a kit:

• We do NOT know the appropriate maximum time interval for evidence collection in prepubertal children.

• The hope of collecting evidence must be weighed against the emotional needs of the child.

• A modern scientific study to evaluate rape kits in prepubertal children is needed.
When to request evidence collection

• <96 hrs
  - “Immediate” forensic exam

• Non-acute cases
  - Most cases present days to months to years after the event
  - Decreased chance of finding evidence on exam

• Evidence collection is appropriate even when physical findings are normal or nonspecific

Evidence Collection Swabs

• Swabs will be included in the kit and should be used for oral, fingernails, genital and any areas that may contain DNA from the assailant.

• Always use a rolling technique to ensure entire swab is utilized

• 2-3 swabs should be used per area. To ensure an equal amount of DNA is on the swab you should swab simultaneously.

• Any skin findings such as a hickey, bite mark or dried secretions use the wet-to-dry swab technique.

• If needing buccal swabs to identify the victim’s DNA, make sure this is done after collecting the oral swabs for testing and the mouth is rinsed.
Nonbody Specimens

• The victim’s narrative can provide additional information that can assist with evidence collection.

• If the assault was vaginal/penile/anal the underwear and pants are of GREAT importance

• Linens or clothing that may have DNA on them (i.e. dried semen on towel)

• All items should be dried and placed in paper or cardboard only, never plastic

Chain of Custody

• All swabs and evidence envelopes should be labeled and signed by examiner

• Tamper resistant tape
  - Seals the kit
  - Seal should be signed and dated by examiner

• No holes or openings should be present in the outermost packaging.

• The examiner should secure the kit in a locked area until it is released to law enforcement
THE MEDICAL IMPRESSION
What we can conclude from exam and lab information

- Levels of certainty RE: sexual contact

- Diagnostic
  - Laboratory evidence
    - Pregnancy
    - Sperm
    - STD
What we can conclude from exam and lab information

- Diagnostic
  - Laboratory evidence
    - Pregnancy
    - Sperm
    - STD

Gonorrhea
Chlamydia
Trichomonas
HIV
Syphilis
Hepatitis C

Should you test for STIs after acute assault?

YES!
### Implications of STIs in prepubertal children

<table>
<thead>
<tr>
<th>STI</th>
<th>Diagnostic of Sexual Contact</th>
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</thead>
<tbody>
<tr>
<td><em>Chlamydia</em></td>
<td>diagnostic of sexual contact in children &gt;2 y.o.</td>
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<tr>
<td><em>N. gonorrhea</em></td>
<td>diagnostic of sexual contact</td>
</tr>
<tr>
<td>Syphilis</td>
<td>diagnostic of sexual contact</td>
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<tr>
<td>HIV</td>
<td>diagnostic of sexual contact</td>
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<table>
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<tr>
<th>STI</th>
<th>Implications</th>
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<tr>
<td><em>Trichomonas</em></td>
<td>very suspicious for sexual contact</td>
</tr>
<tr>
<td>Condyloma</td>
<td>suspicious for sexual contact</td>
</tr>
<tr>
<td>Genital herpes</td>
<td>suspicious for sexual contact</td>
</tr>
<tr>
<td>Bacterial vaginosis</td>
<td>inconclusive</td>
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When to test?

Disclosure of genital contact

Signs or symptoms consistent with infection

STI present in a family member/AP

Patient has STI risk factors

• Significant concern of patient or parent

What we can conclude from exam and lab information

• Indicative
What we can conclude from exam and lab information

• Indicative of Blunt Force [Penetrating] Trauma
  - Genital Injury

What we can conclude from exam and lab information

• Indeterminate
  - This finding is seen in patients who are sexually abused but this finding also can have other explanations
What we can conclude from exam and lab information

- **Indeterminate**
  - This finding may “Support Aisha’s history of penile-genital contact” if a disclosure was made.

<table>
<thead>
<tr>
<th>Normal</th>
<th>Non-specific</th>
<th>Indeterminate</th>
<th>Supportive</th>
<th>Indicative</th>
<th>Diagnostic</th>
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<tr>
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What we can conclude from exam and lab information

- **Indeterminate**
  - A clear and consistent disclosure from the child is the most reliable indicator that abuse has occurred.
What we can conclude from exam and lab information

• Non-specific
  - “Red down there”
  - “This finding is not specific in the diagnosis of sexual abuse.”
What we can conclude from exam and lab information

• Normal
  - “A normal exam neither rules out or confirms the occurrence of sexual abuse as Kierra describes.”

Conclusions

The most common finding in abused children and adolescents is a normal exam

The statement “no evidence of abuse” does not reflect much understanding of the population of sexual abuse victims-try not to use it!

Medical exams can (and do!) provide an assurance of “normal” to a child or adolescent victim

Evidence collection recommended with ANY suspicion of skin-to-skin contact with GU area within ~ 96 hrs