Anogenital Warts in Children: What Do They Tell Us?

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Case Scenario

- 4 year-old girl noted by mother to have several flesh-colored exophytic papules on perianal skin beginning 6 months ago
- No family members or caretakers have warts
- No history of abnormal Pap smear in mother

Has this child been sexually abused?

How did she acquire HPV?

- Sexual transmission
  - Rates vary widely in literature: 0-80% of cases of anogenital warts (AGW) associated with sexual abuse
  - Positive predictive value of the presence of AGW for sexual abuse is 37% for children aged 2-12 years (70% for children >8 years)
- Perinatal transmission
  - Largely occurs through intrapartum route from direct contact with infected maternal genital tract
  - Infants born via csection?
    - Virus isolated from amniotic fluid, cord blood, breast milk
    - Case report: anal condyloma present at birth

How did she acquire HPV?

- Auto-/heteroinnoculation
  - HPV subtypes do not seem to show the same tropism for either mucosal or cutaneous sites as is seen in adults
  - HPV DNA found in finger brush samples of adults with AGW
  - Possible source of AGW in children
- Fomites?
  - Significance of positive HPV DNA from sensitive assays?

Other considerations….

- Sensitivity of Pap smear to detect presence of HPV?
  - Extrapolate from ability to detect high-grade CIN?
    - Sensitivity of HPV test: 94.6%
    - Sensitivity of Pap Smear: 55.4%
- Length of latency?

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What to do?

- Detailed history
  - Non-leading questions
- Behavioral and social assessment
- Anogenital examination with colposcopy
- Screen for other sexually transmitted infections (STIs)
  - GC/CT NAATs; HIV, RPR, Hep B & C Serologies
- CDC/AAP: Report to child protection agencies
- Treatment?

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HPV Genotyping?

- Experience from adults
- Negative test result ≠ infection was not previously present
- Virus DNA not unique

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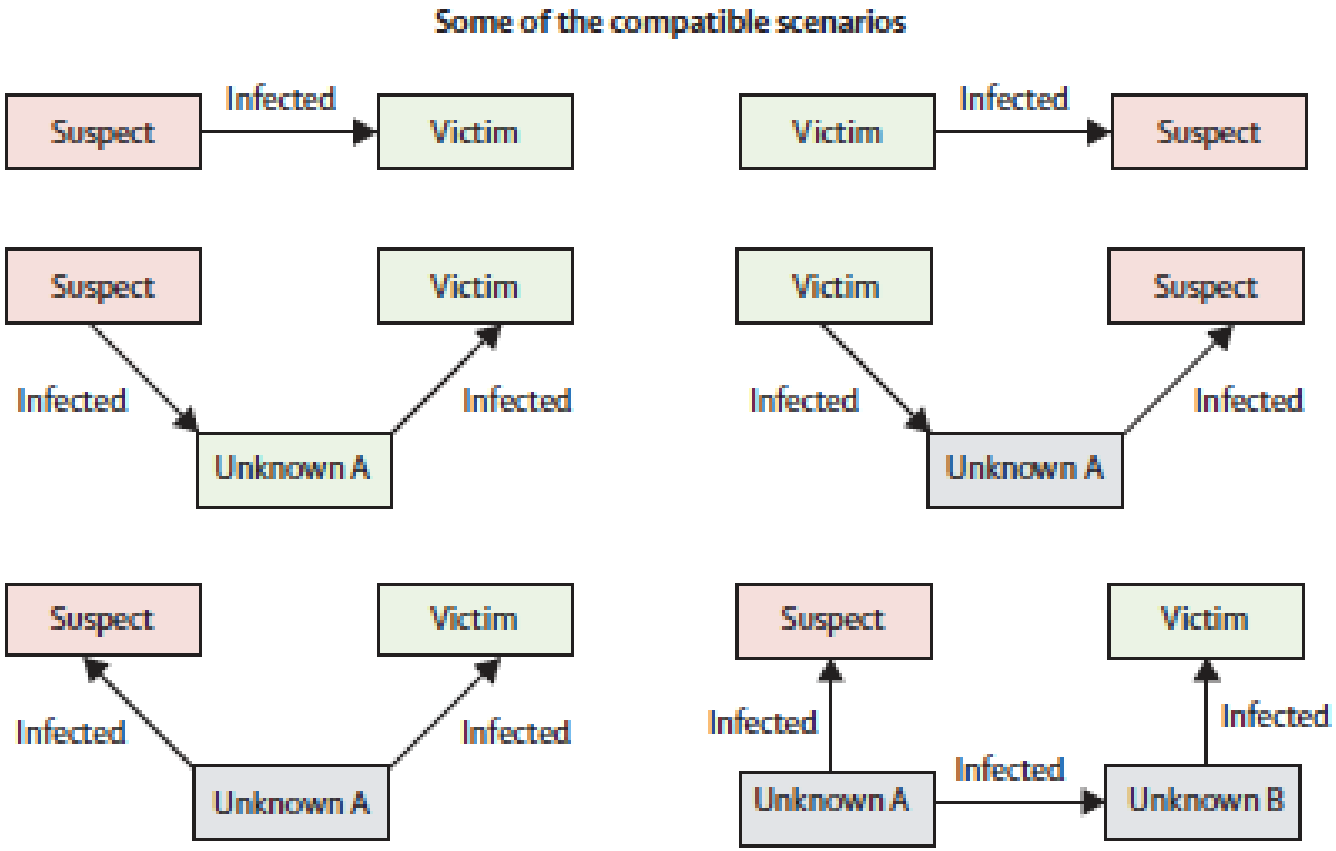
Myth of DNA fingerprinting



Source: Abecasis et. al., Lancet Infectious Diseases 2011; 11(2): 78 - 79

Future risk?

- AGW are benign but surrogate markers for the carriage of high-risk HPV subtypes in adults
- Incidence of high-risk HPVs and their oncogenic risk when acquired before puberty unknown
- Young women tend to clear HPV spontaneously
- Children with persistent HPV infection should be followed closely, as the future risk of cancer is unknown