



Ano-Genital Warts in Children: Sexual Abuse or Not?



Gail Hornor, RNC, MS, CPNP

ABSTRACT

Child sexual abuse is a problem that affects many Americans. The diagnosis of sexual abuse is typically made on the basis of the child's history. Objective evidence of sexual abuse, including abnormal physical findings noted on physical examination or the presence of a sexually transmitted disease, are rare. Ano-genital warts are one of the most common sexually transmitted diseases found in adults. However, is the presence of ano-genital warts in children evidence of sexual abuse? The link between ano-genital warts and child sexual abuse requires an understanding of wart transmission and incubation period to properly interpret their significance. Ano-genital warts in children have serious medical, social, and legal implications. It is important that primary care providers have an understanding of the appearance, mode of transmission, and incubation period of human papilloma virus in children. Implications for practice will provide guidelines for diagnosing, evaluating, and properly managing ano-genital warts in children. *J Pediatr Health Care.* (2004). *18*, 165-170.

Child sexual abuse is a problem that affects many Americans. In 2000, 88,000 children were confirmed by child protective service agencies to be victims of sexual abuse (Putnam, 2003). This number represents a 41% decrease from the peak estimate of 149,800 sexual abuse cases in 1992 (U.S. Department of Health and Human Services, 2001). It is unclear whether the decrease in reported cases of sexual abuse represents an actual decrease in sexual abuse (Jones & Finklehor, 2001). However, it remains clear that sexual abuse is a problem of significant proportion.

Sexual abuse can result in serious long-term sequelae for victims, including depression, anxiety, sleep problems, substance abuse disorders, post-traumatic stress disorder, eating disorders, and dissociation (Hymel & Jenny, 1996; Putnam, 2003). Sexual abuse victims often report feelings of isolation and stigmatization, poor self-esteem, problematic interpersonal relationships, later sexual dysfunction, and a tendency toward revictimization and substance abuse (Hymel & Jenny).

The diagnosis of sexual abuse is typically made on the basis of the child's history (Siegfried, Rasnick-Conley, Cook, Leonardi, & Monteleone, 1998). Objective evidence of sexual abuse, including abnormal physical findings noted on physical examination or the presence of a sexually transmitted disease (STD), are uncommon (Adams & Knudson, 1996; Siegfried et al.). Studies have revealed that only 5% to 23% of girls who have given a history of sexual abuse, including penile penetration of the vagina, have physical findings of sexual abuse (Adams, Harper, Knudson, & Revilla, 1994; Adams & Knudson, 1996; Berenson, 2000; Hymel & Jenny, 1996).

Sexually transmitted diseases that are considered definite evidence of sexual abuse or sexual contact are postnatally acquired gonorrhea or syphilis (Adams, 2001). A positive genital culture for chlamydia or herpes, or a positive wet mount for trichomonas, is evidence of probable sexual abuse (Adams).

Is the presence of ano-genital warts in a prepubescent child evidence of sexual abuse? Should the child be reported to child protective services

Gail Hornor is a Certified Pediatric Nurse Practitioner, Columbus Children's Hospital, Center for Child and Family Advocacy, Child Assessment Center, Columbus, Ohio.

Reprint requests: Gail Hornor, RNC, MS, CPNP, Children's Hospital, 700 Children's Dr., Columbus, OH 43205; e-mail: hornorg@chi.osu.edu.

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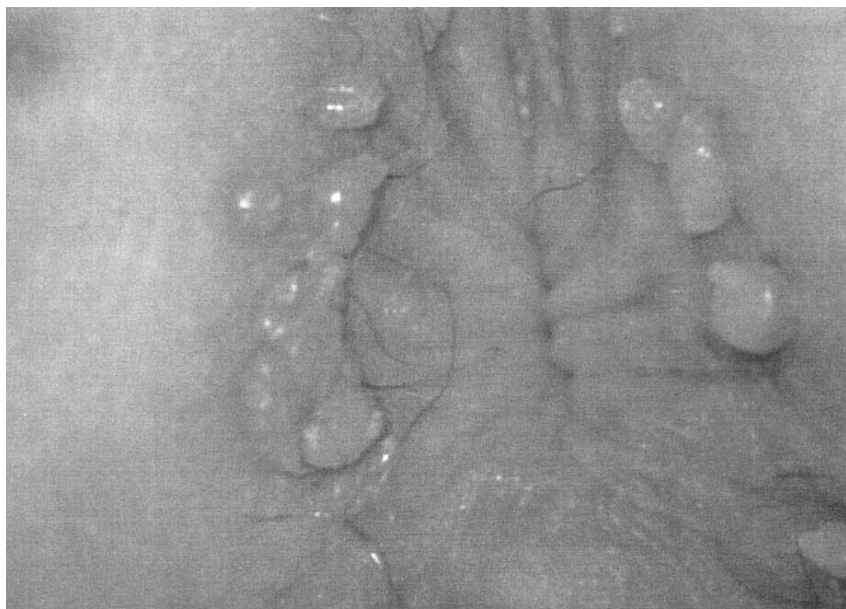


FIGURE 1 HPV lesions around the anus of a 2-year-old girl.

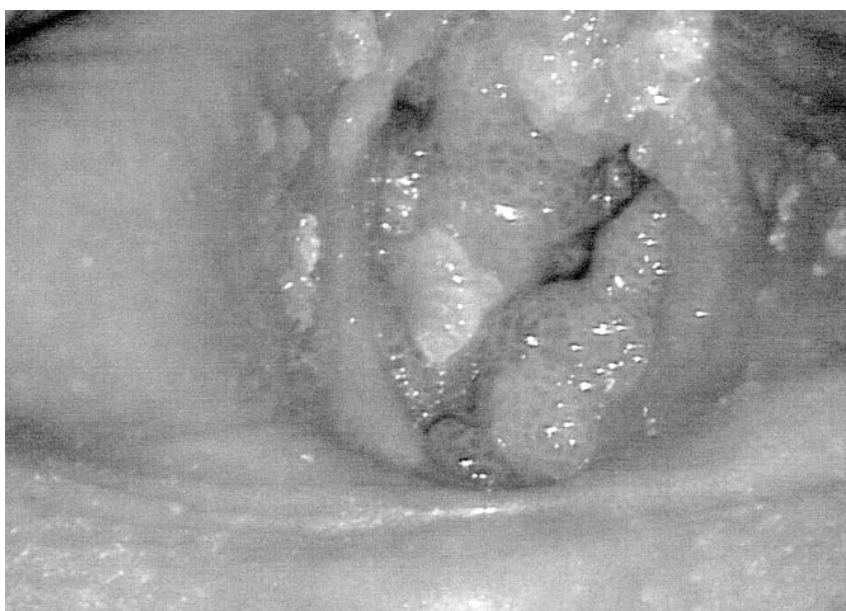


FIGURE 2 Extensive genital HPV in a 5-year-old girl.

(CPS)? Ano-genital warts can present a diagnostic dilemma to primary care providers.

The link between ano-genital warts and child sexual abuse requires an understanding of wart transmission and the incubation period to properly interpret their significance. Given the serious consequences of sexual abuse, it is

imperative that primary care providers, including pediatric nurse practitioners, recognize sexual abuse in their pediatric patients and appropriately report their concerns to CPS. Early detection and treatment of child sexual abuse leads to better outcomes for the victims (American Professional Society on the Abuse of Children [APSAC], 2001). If

child sexual abuse is not identified, the abuse may continue, resulting in serious consequences (Dubowitz, Black, & Harrington, 1992). On the other hand, if sexual abuse is identified in error, there are serious consequences for the child, family, and alleged perpetrator (Dubowitz et al.).

Ano-genital warts or condyloma acuminata are caused by the human papilloma virus (HPV). Ano-genital warts have been recognized as having an infectious etiology for approximately 100 years, with sexual transmission demonstrated within the past 50 years (Frazier, 1998).

INCIDENCE OF ANO-GENITAL WARTS (HPV)

Ano-genital warts (HPV) are one of the most common sexually transmitted diseases of the ano-genital tract in sexually active adults (Carr & Gyorfi, 2000; Cohen, 1997; Smith et al., 1995; Syrjanen & Puranen, 2000). Approximately 10% of the adult population have clinically apparent ano-genital warts (HPV), but molecular diagnostic techniques have demonstrated the presence of HPV in 11% to 80% of asymptomatic, sexually active young women (Siegfried et al., 1998). More than 100 types of HPV exist, 30 of which infect mucosal epithelia (Rice et al., 2000). Mucosotropic HPV types 6 and 11 are the most common cause of ano-genital condyloma (warts) in both adults and adolescents (Carr & Gyorfi; Myhre, Dalen, Berntzen, & Bratlid, 2003; Siegfried et al.; Syrjanen & Puranen). Ano-genital warts in children are associated with both mucosotropic types HPV 6 and 11 and cutaneotropic types HPV 1 and 2 (Myhre et al.). A variety of other HPV types, such as types 16, 18, 31, 33, 34, 35, 45, and 56, also are associated with condyloma, but are present most frequently in the absence of gross lesions (Siegfried et al.).

The incidence of ano-genital warts in children has increased dramatically since 1990 (Cohen, 1997; Siegfried et al., 1998; Syrjanen & Puranen, 2000). Before 1990, only 136 cases of ano-genital warts had been reported in children, yet between 1990 and 1994, at least 326 additional cases were described (Siegfried et al.; Syrjanen & Puranen). The increase in incidence of ano-genital warts in children is thought to parallel the increase in incidence of ano-genital

warts in the adult population (Syrjanen & Puranen). Epidemiologic information for HPV in adults and especially in children is difficult to assess because it is not mandatory to report HPV infections to the Centers for Disease Control and Prevention (Carr & Gyorfi, 2000).

APPEARANCE OF ANO-GENITAL HPV

The vulvar, vaginal, urethral, and perianal areas in girls can be affected by ano-genital warts. Boys typically have lesions in the peri-anal area. Penile warts are rare. The clinical appearance of ano-genital warts vary from subtle, skin-colored, flat warts to moist, pink to brown, cauliflower-like lesions found particularly in the skin creases and around the vaginal and anal openings (Cohen, 1997). HPV also may have the appearance of a fleshy tumor around the introitus, especially in adolescents (Emans, Laufer, & Goldstein, 1998) (see Figures 1, 2, and 3). Lesions noted on the thigh, buttocks, and suprapubic area may resemble common warts (Cohen). Other skin disorders that can mimic HPV include irritant contact dermatitis, skin tags, hemorrhoids, and molluscum contagiosum (Cohen). Molluscum contagiosum is a rash that consists of umbilicated papules with a cheese-like core varying in size from 1 to 5 mm (Behrman, Kliegman, & Jenson, 2000) (see Figure 4).

MODE OF TRANSMISSION OF HPV

Studies indicate that in adults, genital HPV infections are primarily sexually transmitted (Gutman, Herman-Giddens, & Phelps, 1993; Stevens-Simon, Nelligan, Breese, Jenny, & Douglas, 2000). In children, the mode of transmission of HPV infection is not as straightforward (see Box 1). Sexual transmission is recognized as a possibility in children, but other possible modes of transmission have been documented (Adams, 2001; de Jesus et al., 2003; Hadlich & Kohl, 1998).

Vertical transmission of the HPV virus from infected mother to her infant can occur (de Jesus et al., 2003; Frazier, 1998; Hadlich & Kohl, 1998). Adams' (2001) classification scale for evaluating medical findings of suspected sexual abuse lists ano-genital warts/condyloma in a child younger than 2 years of age as a



FIGURE 3 Adolescent female with HPV.



FIGURE 4 Molluscum contagiosum.

nonspecific finding for sexual abuse—perinatal transmission must be considered. Vertical transmission can occur through the bloodstream prior to birth, or at the time of birth, as the infant passes through the infected birth canal (Frazier, 1998). Delivery via caesarean section does not eliminate the possibility of vertical transmission of HPV; there are re-

ports of congenital condyloma after caesarean section without premature rupture of membranes (Syrjanen & Puranen, 2000). Syrjanen and Puranen state that HPV transmission can occur in utero through semen, ascending infection from the mother's genital tract, or transplacentally. Vertical transmission of the HPV virus does not mean that warts

BOX 1 Transmission of ano-genital warts in children

Sexual abuse

- Oral-genital contact
- Genital-genital contact
- Genital-anal contact
- Fondling
- Digital penetration of the vagina or anus

Nonsexual transmission

- Autoinoculation
- Direct contact with caretaker
- Contact with objects or surfaces contaminated with HPV foamites

Vertical transmission (from mother to infant)

- Via bloodstream prior to birth
- During vaginal delivery through infected birth canal
- Via caesarean section with or without early rupture of membranes

Data from Syrjanen, S., & Puranen, M. (2000).

BOX 2 Ano-genital warts

All children

- Obtain maternal/paternal history of genital warts or abnormal Papanicolaou smears
- Obtain psychosocial and behavioral history
- Obtain medical history including history of warts anywhere on body
- Complete physical examination
- Careful inspection of anus and genitals
- Testing for other sexually transmitted diseases:
 - Gonorrhea culture: oral, anal, and genital
 - Chlamydia culture: anal and genital
 - Human immunodeficiency virus, rapid plasmin reagin, and hepatitis B surface antigen
- Discuss with parent/guardian possible modes of transmission for the warts, including sexual abuse
- Explore with parent/guardian any sexual abuse concerns

Child 2 years or younger

- No report to child protective services needed unless one of the following is present:
 - Abnormality noted on ano-genital examination that is of concern for sexual abuse
 - Another sexually transmitted disease
 - Psychosocial/behavioral issue that is of concern for sexual abuse
 - Parental concern of sexual abuse that warrants investigation

Child 3 years or older

- Report concerns of possible sexual abuse to child protective services
- Nonleading interview of child regarding sexual abuse concerns (should be completed by a trained forensic interviewer)

Data from Atabaki, S., & Paradise, J. E. (1999).

must be present at birth or shortly after birth. HPV is a latent virus and can reside in the skin and mucous membranes without causing warts. The warts may not appear until months or even years after birth (Frazier).

It is important to understand that the absence of visible ano-genital warts in the mother during pregnancy does not eliminate the possibility of vertical transmission to the child (Frazier, 1998). HPV can cause subclinical infection,

meaning the virus can be present on the cervix or in the vagina without causing warts (Frazier).

Ano-genital warts (HPV) also can be transmitted via autoinoculation (Cohen, 1997; Syrjanen & Puranen, 2000). Children with a common wart on their hands or elsewhere on their body can transmit the virus by touching their warts and then touching their own genitals.

HPV can be transmitted nonsexually from direct contact with caretaker contaminated with genital HPV or common warts (Cohen, 1997; Syrjanen & Puranen, 2000). For example, caretakers with genital warts who touch or scratch their genitals and then without washing their hands change a baby's diaper or assist a child with toileting/bathing may transmit the virus to the child's genitals. A caretaker with common warts of the hands could transmit HPV in the same manner. HPV transmission via contact with contaminated objects or surfaces is possible (Syrjanen & Puranen). Evidence exists that HPV can be transmitted on small water droplets called foamites (Frazier, 1998). Foamites have been found in the underwear of people with HPV, and Savin (2001) proposes that foamites may be a source of initial infection or reinfection with HPV. Re-innoculation may occur in people who do not change their underwear frequently (Savin).

Sexual abuse must never be eliminated when considering possible modes of transmission for ano-genital HPV. Many forms of sexual abuse can result in transmission of HPV, including genital-genital contact, genital-anal contact, oral-genital contact, fondling, and digital anal/genital penetration.

Incubation Period of HPV

Disagreement exists regarding the incubation period of HPV. Frazier (1998) states that studies have indicated that HPV can remain dormant for up to 5 years without causing lesions if transmitted vertically. However, other professionals have concluded that 2 years is the longest period that the HPV virus lays dormant following vertical transmission (Frazier). The long incubation period for HPV is important to understand when treating a child with ano-genital warts. Vertical transmission of HPV is possible even when lesions first appear years after birth (Frazier).

Viral Typing of HPV

Viral typing of the ano-genital wart does not help in determining if the lesions are sexually or vertically transmitted (Frazier, 1998). For example, HPV types 1 and 2 cause hand, foot, and body warts (Frazier). Types 1 and 2 can also be found in the ano-genital area. Given what is known regarding modes of transmission for HPV, the following scenarios are possible when a child presents with HPV types 1 or 2 in the ano-genital area. It is possible that a child can transmit the warts by autoinoculation. The warts also could be innocently transmitted to the child by direct contact with a caretaker with warts. However, sexual abuse involving fondling or digital penetration is also possible. A similar scenario exists when the ano-genital warts are typed and are of a type that are typically found in the genital/anal area. Therefore, viral typing is costly and time intensive and not routinely recommended.

IMPLICATIONS FOR PRACTICE

Ano-genital warts in children have serious medical, social, and legal implications. Concerns including possible sexual abuse, vertical transmission from the mother, and the potential for the future development of ano-genital malignancies in children with ano-genital warts must be addressed. All of these issues can be very anxiety producing for families.

Medical Implications

Proper diagnosis of ano-genital warts is crucial. If the primary care provider questions his or her diagnosis of ano-genital warts, a second opinion consultation should be obtained from a practitioner with expertise in diagnosing ano-genital warts, such as a child abuse specialist, pediatric dermatologist, or pediatric gynecologist.

Any child with ano-genital warts requires a complete medical examination, including a careful examination of the anus and genitalia for possible signs of sexual abuse. An oral examination for warts also should be conducted. All ano-genital warts should be documented and photographed if possible. Testing for other sexually transmitted diseases should be completed (see Box 2).

A maternal and paternal history of ano-genital warts, lesions, or STDs should be obtained. One should inquire

BOX 3 Psychosocial history obtained from parent or guardian

- Maternal age at birth of first child
- Paternal age at birth of first child
- Marital status of parents
- Mother's current employment status
- Father's current employment status
- Educational level of parents
- Past or present drug and/or alcohol concerns for parents or significant others
- Past or present domestic violence concerns for parents
- Past or present mental health concerns for parents, such as schizophrenia, bipolar disorder, depression, or anxiety requiring medication
- History of child sexual abuse within the family—mother and/or father victimized as a child
- Previous involvement with child protective services
- History of the child being placed with relatives or in foster care
- Parental mental retardation concerns (qualified for mental retardation case manager)

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if the mother has received regular gynecological care and if she has a history of abnormal Papanicolaou (Pap) smears. Conventional Pap smears have a low sensitivity for HPV (Kulasingam et al., 2002). If maternal transmission appears to be the most likely mode of transmission for the HPV, it should be suggested

have been linked to cervical and other neoplasms in adults (Emans et al., 1998; Pakarian et al., 1994). The long-term risk of neoplasia for children, especially of the vulva, is unknown but remains a significant worry (Emans et al.). Emans et al. discuss the cases of several young children with atypical cells or dysplasia on Pap smear. The frequency and methodology of follow-up of children with an HPV infection is controversial among specialists in the field.

Treatment of children with ano-genital warts also is controversial. Without treatment, the rate for spontaneous remission of HPV may be as high as 67% (Frazier, 1998). Some clinicians opt not to treat the warts because of the high rate of spontaneous remission. Treatment failure rates for HPV can be from 25% to 50% (Frazier). Treatment options are based on the location and extent of the lesions and include burning, freezing, laser treatment, surgery, and chemical treatment. Primary care providers may choose to treat a few noninvasive lesions, but many children require referral to a dermatologist, pediatric gynecologist, or surgeon for proper treatment and follow-up.

Social Implications

A complete psychosocial assessment must be obtained, including a family tree that indicates all persons living in the home with the child. Familial social risk factors must be explored, such as drug or alcohol concerns, domestic violence, past or current involvement with

If maternal transmission appears to be the most likely mode of transmission for the HPV, it should be suggested to the mother that she obtain more sensitive testing for HPV, such as HPV DNA.

to the mother that she obtain more sensitive testing for HPV, such as HPV DNA. Mothers should be made aware of the potential increased risk of cervical cancer for themselves if they do indeed have HPV, to better make health care decisions for themselves. Some types of HPV, especially types 16, 18, 31, and 33,

CPS, mental health issues, and a history of child abuse/neglect (see Box 3). One should explore with the parent or guardian any past or present concerns regarding sexual abuse of any family member, especially the child with anogenital warts. A behavioral history of the child, particularly any sexual acting out behaviors, should be obtained.

Legal Implications

Child abuse reporting laws require professionals, including pediatric nurse practitioners, to report concerns of suspected child abuse to the responsible CPS and law enforcement agencies (APSAC, 2001). The child abuse reporting laws override the professionals' ethical responsibility to maintain patient confidentiality (APSAC). Child abuse reporting laws vary from state to state, and professionals are responsible for understanding the state law in which they practice (Johnson, 2002). Professionals are protected from criminal and civil liability when reporting a concern of suspected child abuse.

CPS should be notified of concerns of possible sexual abuse when anogenital warts are diagnosed in any child older than 3 years (Adams, 2001). It also is important for CPS to be educated by the reporting medical provider of other possible nonsexual modes of transmission for the anogenital warts. For children younger than 3 years, CPS should be notified if other risk factors are noted during assessment, such as an abnormal genital examination, the presence of another sexually transmitted disease, or psychosocial information that warrants investigation (Adams).

Anogenital warts (HPV) in children have serious medical, child protection, social, and legal implications. It is imperative that primary care providers, including pediatric nurse practitioners, competently diagnose anogenital warts, refer to a child advocacy center or child abuse specialist as needed, understand the child protection issues, and properly report concerns of sus-

pected sexual abuse to CPS. Knowledgeable, efficient care by the primary care provider of a child with anogenital warts can assist the patient and family in dealing with a diagnosis with multifaceted implications.

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