Genital Warts in Children

by Lori Frasier, MD

Introduction

Genital warts or condyloma acuminata are caused by the Human Papilloma Virus (HPV) These warts, described by the ancient Greeks and Romans, have been recognized as having an infectious etiology for nearly a hundred years, with sexual transmission as an etiology demonstrated within the last 50 years. Often described as "epidemic" in adult patients, prior to 1980 there were fewer than 40 pediatric cases reported in the medical literature Although not a "reportable" infectious disease by Centers for Disease Control standards, in children, HPV is not uncommon. Because of possible sexual transmission, the presence of genital warts raises concern that a child may have been infected by sexual abuse. In the past two decades, advancements in molecular biology and genetics have shed light on this virus and its behavior. Medical providers experienced in both sexual abuse evaluations and in HPV assessments are frequently called upon to sort through conflicting opinions and misinformation regarding HPV infections in children. This article will review some of the most commonly asked questions about HPV and provide answers for the multiple medical and non-medical disciplines involved when allegations of child sexual abuse arise in the context of genital warts.

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How is the Human Papilloma Virus Transmitted?

HPV is known to be transmitted sexually in adults and in children. It is likely that some type of mucosal or skin damage is necessary to allow the virus to enter epithelial cells for replication. Over 70 subtypes of HPV have been identified, many with an affinity for different parts of the body. For example, the common wart is caused by HPV type 1, and the plantar wart by HPV type 2 The vast majority of genital warts are types 6 and 11 Other subtypes, 16 and 18, also infect the genital tract and are also associated with cervical cancer. In children there are other important modes of transmission to consider. Vertical transmission occurs when an infected mother transmits the virus to her infant. This can occur through the bloodstream prior to birth, or at the time of birth, as the infant passes through the infected cervix and birth canal. Because HPV is a latent virus and can reside in the skin and mucous membranes without causing warts, such lesions may not appear for several months or possibly years following birth. There is some evidence that HPV is transmitted on small water droplets called fomites. Individuals who bathe in public showers have a much higher rate of plantar warts than those who don't.

Does the absence of warts in the mother during her pregnancy support sexual transmission?

No. HPV can cause subclinical infection, meaning that the virus can be present on the cervix or in the vagina without causing warts. A careful maternal history is essential and must include a history of warts or abnormal PAP smears If the history is positive for such conditions it may be possible that warts in a young child were transmitted from the mother. However, a negative history and even a negative laboratory examination of the mother only means that the method for testing the mother may not have been sensitive enough to detect subclinical infection. Very sensitive techniques which require amplification of HPV DNA have suggested that HPV may be present in up to 80% of asymptomatic sexually active women.

Does the age of the child help in determining if warts are sexually transmitted versus vertically transmitted?

It may. However, there are currently no longitudinal studies which clearly define the outside time limits of vertical transmission. Such a study would need to follow infants born to infected mothers for at least 5 years. Additionally, the most sensitive DNA amplification technique, PCR (polymerase chain reaction), would need to be performed on the child at specified intervals. Some professionals have concluded that 2 years is the longest period of time that the virus can lay dormant if transmitted vertically Beyond two years, it is postulated, children are more likely to have been sexually abused if they develop warts. This presumption is based on adult HPV transmission data, some limited observational data, and one small study following children to 2 and one-half years. On the other hand, it is this author's experience that in many children over age 2, despite a comprehensive evaluation for sexual abuse, it is often impossible to determine the source of infection. The two year cutoff also fails to address the issue that a very young child with warts may have been sexually abused. Certainly, the older the child, the more likely the lesions were sexually transmitted.

Does viral typing assist in determining if lesions are sexually or vertically transmitted?

No. The most common type of wart found on the genital area of adults and children is HPV type 6, 11. Occasionally types 16, 18, 31, 35 are found in children. All have the same mode of transmission, however these latter types are more strongly associated with cancer. Types 1 and 2 have been found on the anogenital area. Some authors have suggested that

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the presence of these types which cause hand, body and foot warts are proof of non-sexual transmission. However, this does not address the issue that sexual abuse of young children often consists of fondling or digital penetration of the vagina or anus. However, such warts may also be transmitted by the child to himself or herself in an innocent manner. Viral typing is costly, time intensive, and, if done by the most sensitive method - PCR, still in the realm of the research laboratory.

The diagnosis of genital warts in a child should, in most circumstances, raise a concern of sexual abuse.

Should all adults be checked?

A recommendation that all adults be checked without a specific allegation of sexual abuse or a named perpetrator will not be helpful in determining if sexual abuse was the cause. This is due to the high incidence of the virus in the population. Men may have no symptoms. However, adults should be examined as a part of their own health maintenance since some types of HPV may cause anogenital and cervical cancers. On the other hand, if a child with genital warts names a specific individual, the absence of lesions on that individual may not disprove that that individual is the perpetrator. HPV has rates of spontaneous remission that may be as high as 67% without treatment. In one case, an alleged perpetrator tried to prove he could not have been the individual the child named because he had warts and she did not. HPV is not 100% infective. Also, individual immunity may play a role as to whether infection occurs. Immunosuppressed patients such as those with HIV disease or on chemotherapy for cancer or organ transplants can develop extensive, recalcitrant warts. Any child who presents with extensive or aggressive lesions should be evaluated for diseases which cause immune suppression.

If genital warts are treated and go away, does reappearance indicate reinfection?

Not necessarily. All known treatments for HPV have a failure rate from 25-50% regardless of whether the lesions are burned, lasered, frozen, or chemically treated. The reason for this is that the virus resides in normal appearing skin around the warts. Therefore, complete eradication of the virus is neither practical nor possible. Topical therapies may cause discomfort and require repeated applications. Laser treatments must be done under a general anesthesia in children and may result in post-operative pain and scarring. Because the spontaneous remission rate is as high as the success rate for treatment, a physician may opt not to treat genital warts.

Does the location or appearance of the warts aid in determining if they are sexually transmitted?

Because genital subtypes infect anogenital epithelium, the location of the warts will be similar whether vertically, or sexually transmitted. Tiny, almost indiscernible lesions have been found to have been caused through sexual abuse, and large, aggressive lesions vertically transmitted. The patient's individual immune response seems to play an important role. There may be evidence that warts extending into the anal canal require some type of anal penetration to inoculate the virus internally. Rectal thermometers and suppositories used in young children may serve this function however. Although most anogenital warts are perianal in children, they can and do occur anywhere. The appearance varies greatly from small, flat, flesh-colored lesions, to large cauliflower-like masses on stalks. Lesions on the mucous membranes will appear very different from those on the skin of the labia or penis.

In light of all this conflicting and confusing information how does one determine if the warts were sexually transmitted or not?

The diagnosis of genital warts in a child should, in most circumstances raise a concern of sexual abuse. A comprehensive assessment should be performed and include:

1) A comprehensive medical history, including maternal/paternal history of genital lesions or abnormal PAP smears, social history, behavior and developmental history.
2) A non-leading developmentally appropriate interview of the child. Preverbal children are an especially difficult problem. Without a clear history of abuse, normal examination and absence of other STD's, it may be nearly impossible to determine if, when, and by whom such a child was abused.
3) A complete physical exam, including an oral evaluation for warts and an anogenital examination to determine if there are any physical findings to indicate sexual abuse.
4) Laboratory evaluation, including a chlamydia culture and a serologic test for syphilis. If there is any vaginal discharge, a gonorrhea culture should be done also. HIV testing is indicated if warts are aggressive or difficult to treat. Because HPV is sexually transmitted, the presence of another STD will be indicative of sexual abuse. Syphilis is known to cause condyloma lata, a syphilitic genital wart which has been confused with condyloma acuminata. In most cases biopsy of the lesions is not necessary to confirm the diagnosis, but occasionally may be performed if lesions are atypical

It is important to keep abreast of new developments in understanding HPV disease in children. As recently as 10 years ago, the presence of condyloma acuminata in a child might result in a diagnosis of

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sexual abuse and foster placement. Experience has taught us to be cautious in making a determination of sexual abuse in a child. Failure to recognize sexual abuse can have devastating consequences, but so can an incorrect diagnosis of abuse. The presence of genital warts alone is not a diagnostic sign of sexual abuse, but rather directive to obtain a comprehensive medical assessment of the child by an experienced and skilled examiner.

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INVESTIGATION

Investigative Liaison with the Military

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Introduction

What do you do when an ongoing investigation results in the identification of a suspect, victim, or witness who is active duty with the military but has left town since the incident to return to some military assignment hundreds or even thousands of miles from where the incident occurred? Will your agency pay to fly you there to do the interview? What if this military person is now in Japan or on a ship somewhere in the Indian Ocean?

This is a scenario which is not unusual but which may leave local, state, and even federal agencies unsure about how to proceed to get the person interviewed. This article will examine the role of Military Criminal Investigative Organizations, and explain how they can be enlisted to help local agencies.

The MCIOs

The MCIOs, or the Military Criminal Investigative Organizations, are the Office of Special Investigations (OSI) within the Department of the Air Force, the Criminal Investigation Command (CID) within the Department of the Army, and the Naval Criminal Investigative Service (NCIS) within the Department of the Navy (serving both the Navy and the Marine Corps). Each agency employs trained criminal investigators, known as special agents, who are familiar with interview and interrogation techniques and who understand the military service which they support. Special agents receive training on many aspects of their duties, including the investigation of alleged child sexual and physical abuse.

The MCIOs' investigative jurisdiction covers any criminal offense defined in the Uniform Code of Military Justice (UCMJ), particularly those offenses which are considered felonies within civilian jurisdictions. Even though the term "felony" is not officially used in military justice, it is a common term among both civilian and military law enforcement and criminal investigative agencies. The MCIOs, therefore, may investigate any crime punishable under the UCMJ or by federal law where there is a military interest, as well as provide investigative assistance to local, state, and federal agencies. MCIOs often work with local agencies on joint task forces or on joint investigations in which both agencies have an interest.

In civilian criminal investigations, a need for investigative assistance from the military generally arises when a case requires the interview or interrogation of an active duty person who is assigned to a far-away location.

Investigators and Their Training

Special agents of OSI, CID, or NCIS may be either civilian or active duty military personnel. They generally have top-secret security clearances and all are professional investigators. Each undergoes initial criminal investigations training and most have specialized training as well. Many are members of APSAC, and attend national child abuse training conferences each year to keep abreast of the latest information regarding child abuse investigations and other issues.

Coordination with State and Local Agencies

There are many situations which may result in a local or state agency needing to interview a military person. A sailor may have been witness to an aggravated assault while home on leave from his ship in the Indian Ocean. A female Army sergeant may have been raped in a motel while traveling across country during a transfer from one duty station to another, but failed to report it at the time of the incident out of fear for her safety. A recruiter, since transferred overseas, may become a suspect in a child abuse case when allegations are reported by his daughter's friend to a teacher. Military personnel who become victims, witnesses, or suspects may be on ROTC duty, recruiting duty, travel status, or on leave, or for some other reason, present at the scene of a crime or may later learn the details of a crime from someone who was present. The MCIOs are able to locate such persons and interview them on behalf of the civilian agency conducting the investigation.

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