PRACTICE

FIVE THINGS TO KNOW ABOUT ...

Human papillomavirus and anogenital warts in children

Amy Ornstein MDCM, Todd Hatchette MD

Anogenital warts in children can be caused by human papillomavirus genotypes associated with common warts

There are more than 130 types of human papillomavirus (HPV). Although there is a tendency for different types of HPV to cause anogenital warts in children than in adults, the use of testing for HPV DNA in the medical workup of children with anogenital warts is not specific enough to establish a history of sexual abuse. In a Canadian cross-sectional study, 35 of 72 children referred to a pediatric dermatology clinic for anogenital warts had HPV genotyping. Four genotypes, 2, 3, 7 and 57, which also cause common warts, were associated with two-thirds of anogenital warts. In 9 of 18 children in whom sexual abuse was suspected or confirmed, only two had the HPV genotypes 6 and 11 that are more typical of adult anogenital warts.

Anogenital warts in a child do not always indicate sexual abuse

Guidelines suggest that anogenital warts in a child, in the absence of other indicators of abuse, is of indeterminate specificity for sexual transmission.⁵ A retrospective review of children with anogenital warts referred to a sexual abuse clinic found that 31% were "likely sexually abused," but the likelihood of abuse increased with age. Children with anogenital warts who were four to eight years of age and over eight years were, respectively, 2.9 and 12.1 times more likely to have been abused than children less than four years of age.6

The decision to report anogenital warts to a child protection authority should be based on case-specific information

Thorough medical, family and social histories are critical in the evaluation of a child with anogenital warts; nonsexual modes of acquisition need to be considered. Given that the predictive value of anogenital warts as a marker of abuse increases with age, some suggest anogenital warts in a child four years of age or older should be reported to a child protection authority.⁶ Irrespective of age, a disclosure of abuse, concern from a caregiver about abuse and physical findings suggestive of abuse should always be reported to a child protection authority.⁴

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Affiliations: From the Department of Pediatrics (Ornstein), IWK Health Centre; and the Department of Pathology and Laboratory Medicine (Hatchette), Dalhousie University, Halifax, NS

 $\textbf{Correspondence to:} \ Dr. \ Amy \ Ornstein, amy.ornstein@iwk.nshealth.ca$

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Children can acquire HPV through both sexual and nonsexual contact

In a prospective cohort study of children referred for evaluation of anogenital warts, common modes of transmission were autoinoculation, heteroinoculation (transmission during bathing or diapering from a caregiver infected with HPV) and perinatal transmission.³ Fomite transmission, which requires an inanimate object to carry a pathogen, has also been reported.⁴

Anogenital warts in children do not always need to be treated

When left untreated, most warts will self-resolve within two years. Families and children should be counseled that, regardless of treatment, recurrence of warts is common. If patients have symptoms (e.g., pain, bleeding, discomfort), medical and surgical options for treatment are available.⁴

References

- Marcoux D, Nadeau K, McCuaig C, et al. Pediatric anogenital warts: a 7-year review of children referred to a tertiary-care hospital in Montreal, Canada. Pediatr Dermatol 2006;23:199-207.
- Workowski KA, Berman S; Centers for Disease Control and Prevention (CDC). Sexually transmitted diseases treatment guidelines, 2010. [published erratum appears in MMWR Recomm Rep 2011;60:18. Dosage error in article text]. MMWR Recomm Rep 2010;59(RR-12):1-110.
- Handley J, Hanks E, Armstrong K, et al. Common association of HPV 2 with anogenital warts in prepubertal children. *Pediatr Dermatol* 1997;14:339-43.
- Sinclair KA, Woods CR, Sinal SH. Venereal warts in children. *Pediatr Rev* 2011;32:115-21.
- Adams JA. Guidelines for medical care of children evaluated for suspected sexual abuse: an update for 2008. Curr Opin Obstet Gynecol 2008;20:435-41.
- Sinclair KA, Woods CR, Kirse DJ, et al. Anogenital and respiratory tract human papillomavirus infections among children: age, gender, and potential transmission through sexual abuse. *Pediatrics* 2005;116:815-25.