

# Pediatric Clips

## *Anogenital HPV: When little bumps cause big concerns*

*By Lori Vavul-Roediger, MD*

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Pediatric Clips from The Children's Medical Center of Dayton are quick reviews of common pediatric conditions.

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### CASE STUDY

Zachary, a 3-year-old developmentally delayed male, presents to your office with a one-month spreading perianal rash. On examination you notice fleshy, wart-like lesions on

Zachary's anus and diagnose condyloma acuminata. Maternal history reveals an abnormal Pap smear, but no recollection of anogenital lesions. Zachary was born vaginally. His

mother denies concern for abuse, but discloses that for six months they have lived with multiple people due to a history of domestic violence between Zachary's parents.

### CASE DISCUSSION

Zachary has an infection with human papilloma virus (HPV). HPV is a group of DNA viruses with over 100 identified strains.<sup>1</sup> HPV causes common, plantar, flat and filiform warts. HPV also infects mucus membranes (anogenital, conjunctival, and respiratory tract sites).<sup>2</sup> Anogenital "warts" are called condyloma acuminata. Types 6 and 11 commonly cause anogenital warts in adolescents and adults.<sup>3-5</sup> In children, anogenital warts are associated with both mucosotrophic types 6 and 11 and cutaneotrophic types 1 and 2.<sup>6</sup> Cutaneotrophic types near the anogenital regions may mimic infection with mucosotrophic HPV types.

As the most prevalent sexually transmitted infection in the US, approximately 75% of adults will acquire genital HPV by age 50.<sup>1</sup> Since the 1990s, an increase in the incidence of pediatric anogenital warts<sup>3,7</sup> mirrors the rise noted in the adult population. HPV infection of the anogenital or laryngeal/oral tissues in children may result from different modes of transmission.<sup>3</sup> Infection may be acquired transplacentally through the bloodstream, from exposure to amniotic fluid in utero or during delivery, or with contact from cervical or genital lesions during birth.<sup>3,8</sup> Lack of visible maternal anogenital warts does not preclude the possibility of vertical transmission.<sup>9</sup> HPV infection may also occur from autoinoculation or heteroinoculation from nongenital

mucocutaneous lesions, and possibly from fomites.<sup>3,8-11</sup> Sexual contact is a confirmed cause of anogenital HPV infections.<sup>2,12</sup>

HPV has a variable incubation period, estimated from months to years.<sup>2</sup> Most infected persons lack clinical signs<sup>5</sup> and 70% will spontaneously clear the infection.<sup>9</sup> HPV infection may reactivate, with new lesions presenting months or years after initial infection.<sup>1,8</sup> Anogenital warts initially diagnosed at greater than 24 to 36 months of age have frequently been assumed to be the result of sexual maltreatment.<sup>5,13</sup> Recent medical literature supports some anogenital HPV infections in prepubertal children may result from nonsexual transmission.<sup>3,11,12</sup> No age limit exists to determine HPV transmission mode with certainty.

Given various factors, difficulty often arises in determining whether anogenital HPV is from nonsexual or sexual contact. Pediatric patients presenting with anogenital HPV infections need a complete medical and social evaluation, ideally by a medical practitioner experienced in child sexual maltreatment. Detailed medical history, maternal gynecological history, patient behavioral assessment and discussion of social risk factors are key components of such. A thorough "head to toe" exam for warts and an external genital/anal exam to assess for trauma and other infection is

needed. Testing for sexually transmitted infections is indicated, including gonorrhea, chlamydia, hepatitis B/C, syphilis and HIV. For older, verbal children, a forensic interview is often valuable.

Diagnosis is based on clinical evaluation by an experienced medical examiner. Biopsy of lesions is indicated only for questionable diagnosis, concern for malignancy or for treatment failure. HPV subtyping does not assist in determining mode of transmission or infection source.

Treatment may be handled with a "watch and wait" approach in immunocompetent patients who have no clinical complaints such as bleeding, friability or rapidly growing lesions. Prescription medications such as Aldera or Podocon may be given for at-home treatment. In cases of persistent or reoccurring lesions, treatment failure or other complications, referral to a pediatric dermatologist is recommended.

Referral to child protective services (CPS) is mandatory for concerns of possible sexual abuse. CPS involvement provides further assessment regarding a child's maltreatment risk. It is important for medical providers to recognize that nonsexual transmission of HPV may occur and educate investigators concerning this possibility.

Regarding Zachary, the possibility of nonsexual transmission exists based

Continued from the front.

on the maternal gynecological history. However, a thorough medical and social evaluation should be completed. Given Zachary's age, developmental delay and inability to disclose possible abuse, a referral to CPS is indicated to assure his safety.

## REFERENCES

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## FEATURED SPECIALIST



**LORI VAVUL-ROEDIGER, MD**, is medical director of the department of child advocacy, CARE (Child Abuse Review and Evaluation) clinic and

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child-oriented facility for child interviews, multidisciplinary investigative team consultations and treatment services for child abuse victims. CARE House involves a partnership between Dayton Children's, Montgomery County Prosecutor's Office, Dayton Police Department, Montgomery County Sheriff's Office and Montgomery County Children Services. To reach the department of child advocacy, call 937-641-3050.

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