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Case Report Open Access

HPV6 Infection of an Infant's Penile Condyloma at the Urethral Meatus

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Abstract

Penile warts in infants are rare and condylomata acuminata at the urethral meatus are rarer. This is a first report of a 2.5 years infant with a condyloma acuminatum at the urethral meatus of penis that was found positive for HPV 6, by PCR analysis. Infant's mother presented warts on her hands, suggesting a possible transmission of virus from mother to infant via extragenital contact, without excluding a vertical transmission.

Introduction

Genital warts in children are infrequent while penile warts are even rarer [1-5]. The youngest documented case of this type was a 7-month-old circumcised Caucasian boy presented with a rapidly progressing giant penile condyloma acuminatum that was surgically removed followed by a fatal course of Neisseria meningitis. This case serves as a warning, concerning the course of condyloma in infants, since the infant died from meningococcemia five days after surgery [5]. Condyloma acuminatum of the urethral meatus is very rare while there is only a single report of a 5-year old child presented such a lesion without HPV infection history [5]. Here we present a HPV infected penile condyloma acuminatum at the urethral meatus, of a 2.5 year old infant, with a possible virus transmission from mother to infant.

Patient and Molecular Analysis

A 2.5 years infant, who presented a penile condyloma acuminatum at the urethral meatus, came to the Pediatric Surgery Clinic of General Hospital of Larissa (Figure 1). His mother mentioned that she had presented warts on her hands. The condyloma was surgically removed and two years after surgery the child was still healthy.

The condyloma mass was subdivided to a part that was taken for the standard histological diagnosis while the remaining tissue was immediately immersed into stabilization solution and frozen to -20°C. DNA was extracted from tissue using Puregene® Cell and Tissue extraction kit (Gentra Systems, Inc., USA) and a HPV detection molecular method was applied, as previously referred [6,7]. In brief a multiplex PCR (MPCR) was employed for detection and discrimination of HPV types 6, 11, 16, 18 and 33 (specific E6 gene) using a commercial kit (MPCR kit, Maxim Biotech) which includes specific primers for each HPV type and corresponding positive control samples. The results of HPV-positive sample were reconfirmed by a PCR analysis using specific primers for each HPV type only (Maxim Biotech). We used non-template negative control samples, in each PCR reaction to exclude false positive results. The PCR products were electrophorized through 2% agarose gels, stained with 0.5 mg/ml ethidium bromide and visualized on a UV light transilluminator. The detection of specific sizes bands indicated the presence of target sequences, corresponded to HPV type specific, in our specimen (Figure 2).

We performed a melting curve analysis of PCR products to confirm HPV 6 genotype. Melting Curve analysis was performed in Corbett RotorGene instrument as we have described previously [6,8], using SYBER Green (QuantiTect kit, Qiagen) and ramping 65-95°C (raising by 0.2°C each step).

Results

PCR analysis for HPV detection and typing revealed that the DNA sample, derived from the penile condyloma acuminatum of the infant, was positive for HPV type 6 (Figure 2). Specifically, agarose gel electrophoresis of our specimen showed a 263-bp amplified PCR product, like HPV-6-positive control, corresponding to PCR amplified specific E6 gene of HPV type-6 (Figure 2). Confirmation of HPV6 genotype was done performing a melting curve analysis of penile condyloma and HPV6 positive control PCR products. Both samples showed melting peaks corresponded to HPV6 genotype (Figure 3).

Discussion

We present a rare case of an infant with a penile condyloma acuminatum at the urethral meatus that was analyzed by PCR method and found positive for HPV type 6. In bibliography, it has been referred a single case of a condyloma accumitatum of the urethral meatus in an infant, without a history of HPV infection [5]. Genital HPV infection in children seemed to behave as a sexual transmitted via abuse [9] or vertically transmitted or extragenital contact transmitted [10,11]. In our reported case, the infant's mother mentioned that she had presented

Figure 1: A condyloma acumitatum at the urethral meatus of an infant's penis.

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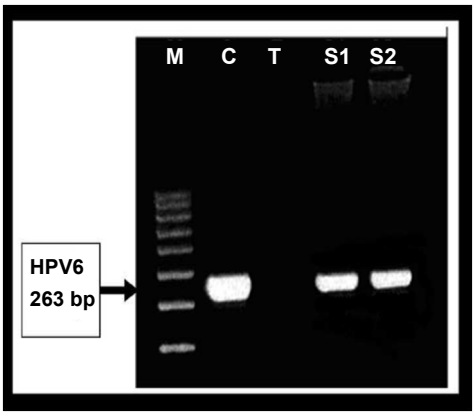

Figure 2: Detection of HPV 6 DNA, in a condyloma acumitatum derived from the urethral meatus penile of a 2.5 years infant, using HPV6-genotype specific primers. Lane M: DNA Molecular Weight Marker (100bp ladder); Lane C: HPV-6 positive control; Lane T: Non-template negative control; Lanes S1 & S2: HPV-6 positive amplified PCR products of DNA sample derived from the infant's penile condyloma.

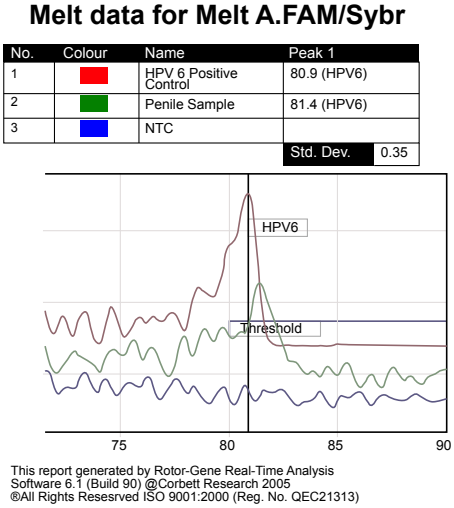

Figure 3: Melting curve analysis of a HPV 6 positive sample, derived from a 2.5 years infant's penile condyloma acumitatum and a HPV6 positive control. Melting peaks at 81°C correspond to HPV6 genotype.

warts on her hands. This could support a HPV 6 transmission from mother to the urethral meatus of infant's penis via extragenital contact, during infant's caring, without excluding a vertical transmission of virus.

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