Case Reports in Dermatology
Case Rep Dermatol 2010;2:46–49
DOI: 10.1159/000312986
Published online: April 20, 2010

ISSN 1662–6567
www.karger.com/cde

Successful Treatment of Anogenital Wart with a Topical Vitamin D_3 Derivative in an Infant

Tomoko Rind Naoki Oiso Akira Kawada

Department of Dermatology, Kinki University School of Medicine, Osakasayama, Japan

Key Words
Treatment · Topical vitamin D_3 derivative · Anogenital wart · Infant

Abstract
Anogenital warts are an infectious disorder of the anogenital lesion caused by one or more human papilloma viruses. Verruca is commonly treated with freezing with liquid nitrogen, laser therapy or application of imiquimod. Such ablative treatment may cause pain and scars on the anogenital lesion. We herein report an infant case of anogenital wart which was successfully treated with a topical vitamin D_3 derivative. Topical application of a vitamin D_3 derivative may be an alternative therapy for anogenital warts in infants.

Introduction

Anogenital warts are an infectious, proliferating disorder of the anogenital lesion caused by one or more human papilloma viruses (HPVs). In the United States, anogenital warts are treated with patient-applied chemical treatment of imiquimod and podofilox, physician-applied chemical treatment of podophyllin resin and trichloroacetic acid, and ablative treatment of cryotherapy with liquid nitrogen and laser therapy [1]. Recently, treatment with topical vitamin D_3 derivatives has been reported to be effective for HPV-infected verruca [2–6]. Here, we report an infant case with an anogenital wart on the anus, which was successfully treated with calcipotriene ointment, a vitamin D_3 derivative.

Case Report

A 1-year- and 1-month-old male presented with an anogenital wart on the anus without suspicious episodes of infection (fig. 1). The parents had no experience with anogenital warts. The wart did not

Naoki Oiso, MD, PhD
Kinki University School of Medicine, 377-2 Ohno-Higashi, Osakasayama
Osaka 589-8511 (Japan)
Tel. +81 72 366 0221, Fax +81 72 368 2120, E-Mail naoiso@med.kindai.ac.jp

Case Rep Dermatol 2010;2:46–49
DOI: 10.1159/000312986
Published online: April 20, 2010

ISSN 1662–6567
www.karger.com/cde

invade into the rectum and colon. After obtaining informed consent from the parents, we treated the wart with a topical vitamin D_3 derivative of calcipotriene ointment with simple application to the affected lesion twice a day. An initial response of partial regression was observed 2 months later. The apparent regression was achieved 3 months later. Complete regression was confirmed 4 months later (fig. 2). The anogenital wart did not recur for 6 months after complete regression.

Discussion

Anogenital warts are uncommon in children. Skin biopsy and identifying the type of HPV are required to diagnose precisely. Unfortunately, we could not take biopsies from the affected lesion. Therefore, our diagnosis was only based on the clinical appearance. Anogenital warts in children have been reported to be associated with both mucosotropic (HPV6 and 11) and cutaneotropic types (HPV2) of the virus [7]. Recent investigation of HPV typing in nonabused preschool children showed that 3 (1.8%) of 211 children had clinically detectable anogenital warts and that 7 samples from 5 children were HPV-positive (HPV6 and/or 16), detected by polymerase chain reaction [8]. As our patient had anogenital wart only on the mucocutaneous lesion, we surmise that our case was a nonabuse case of anogenital wart caused by mucosotropic HPV.

Verruca is usually treated with freezing with liquid nitrogen, laser therapy or application of imiquimod. Such ablative treatment may cause pain and scars. Especially, scarring may entail dysfunction of the anus and genital lesion. Topical imiquimod and podofilox were not available in Japan at that time. We medicated the patient with a therapy for the anogenital wart with a topical vitamin D_3 derivative. Our case was successfully treated with simple application of calcipotriene ointment to the lesion. Using diapers for the infant patient may bring the occlusive condition.

Previously, the effect of vitamin D_3 derivatives on verruca was speculated to be derived from its potential to regulate epidermal cell proliferation and differentiation and to modulate cytokine production [2, 3]. An important observation was reported which suggested that toll-like receptor (TLR) activation of human macrophages upregulated expression of vitamin D receptor and vitamin D-1-hydroxylase genes, leading to induction of the antimicrobial peptide [9]. This suggests an association of TLRs and vitamin D-mediated innate immunity [9]. Treatment with imiquimod for anogenital warts in an infant was shown to be highly effective [10]. Imiquimod induces the secretion of proinflammatory cytokines and the reaction of antitumor and antiviral cellular innate immunity through TLR 7- and 8-signaling cascade. We surmised that imiquimod and vitamin D_3 derivatives, to some extent, share the same antiviral efficacy.

Previously, Egawa reported the effectiveness of a topical vitamin D_3 derivative for condylomata acuminata on the corona and glans in a 74-year-old man with simple application twice a day for 4 months [6]. The infected duration of anogenital warts in adults varies from a few weeks to many years [11]. It took 4 months for the treatment of the anogenital wart in our infant patient. The possibility of a potent placebo effect was not excluded. A prospective placebo-controlled study is required to evaluate the actual efficacy.

We reported an infant having anogenital wart successfully treated with a vitamin D_3 derivative without developing pain, scar or dysfunction. We propose that topical application of a vitamin D_3 derivative may be an alternative therapy for anogenital warts in infants.

Case Rep Dermatol 2010;2:46–49
DOI: 10.1159/000312986
Published online: April 20, 2010

ISSN 1662–6567
www.karger.com/cde

Fig. 1. Anogenital wart on the anus before treatment.

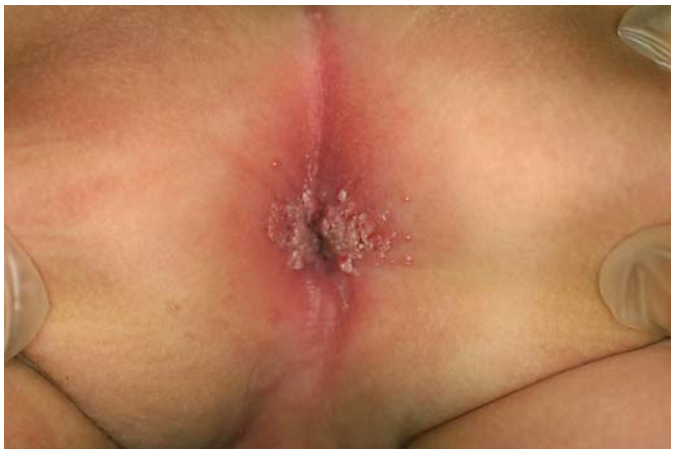
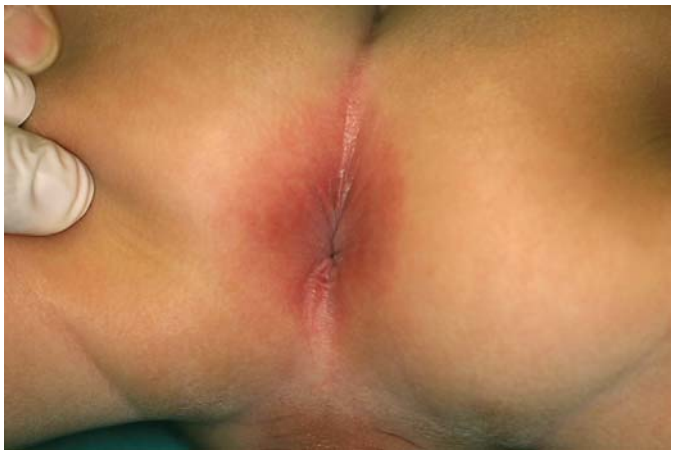


Fig. 2. Complete healing of the anogenital wart 4 months after starting treatment with topical application of a vitamin D_3 derivative.



Case Rep Dermatol 2010;2:46–49
DOI: 10.1159/000312986
Published online: April 20, 2010

ISSN 1662–6567
www.karger.com/cde

References

1 Kodner CM, Nasraty S: Management of genital warts. Am Fam Physician 2004;70:2335–2346.

2 Egawa K, Ono T: Topical vitamin D3 derivatives for recalcitrant warts in three immunocompromised patients. Br J Dermatol 2004;150:374–376.

3 Labandeira J, Vazquez-Blanco M, Paredes C, Suarez-Penaranda JM, Toribio J: Efficacy of topical calcipotriol in the treatment of a giant viral wart. Pediatr Dermatol 2005;22:375–376.

4 Inaba H, Suzuki T, Adachi A, Tomita Y: Successful treatment of warts with a combination of maxacalcitol ointment and salicylic acid sticking plaster. J Dermatol 2006;33:383–385.

5 Imagawa I, Suzuki H: Successful treatment of refractory warts with topical vitamin D_3 derivative (maxacalcitol, 1α, 25-dehydroxy-22-oxacalcitol) in 17 patients. J Dermatol 2007;34:264–266.

6 Egawa K: Topical vitamin D3 derivatives for condylomata acuminata; in Egawa K (ed): Bible of Warts Treatments (in Japanese), Ishiyaku Publishers, Inc., Tokyo, 2005, p 199.

7 Handley J, Hanks E, Armstrong K, Bingham A, Dinsmore W, Swann A, Evans MF, McGee JO, O'Leary J: Common association of HPV2 with anogenital warts in prepubertal children. Pediatr Dermatol 1997;14:339–343.

8 Myhre AK, Dalen A, Berntzen K, Bratlid D: Anogenital human papillomavirus in non-abused preschool children. Acta Paediatr 2003;92:1445–1452.

9 Liu PT, Stenger S, Li H, Wenzel L, Tan BH, Krutzik SR, Ochoa MT, Schauber J, Wu K, Meinken C, Kamen DL, Wagner M, Bals R, Steinmeyer A, Zugel U, Gallo RL, Eisenberg D, Hewison M, Hollis BW, Adams JS, Bloom BR, Modlin RL: Toll-like receptor triggering of a vitamin D-mediated human antimicrobial response. Science 2006;311:1770–1773.

10 Schaen L, Mercurio MG: Treatment of human papilloma virus in a 6-month-old infant with imiquimod 5% cream. Pediatr Dermatol 2001;18:450–452.

11 Chuang TY, Perry HO, Kurland LT, Ilstrup DM: Condyloma acuminatum in Rochester, Minn., USA, 1950–1978. I. Epidemiology and clinical features. Arch Dermatol 1984;120:469–475.