Recalcitrant Cutaneous Warts Treated With Recombinant Quadrivalent Human Papillomavirus Vaccine (Types 6, 11, 16, and 18) in a Developmentally Delayed, 31-Year-Old White Man

Supriya S. Venugopal, MBBS, BSc, M Med; Dedee F. Murrell, MA, BM, MD, FAAD; St George Hospital, Sydney and University of New South Wales Sydney, Australia

The Cutting Edge: Challenges in Medical and Surgical Therapeutics

REPORT OF A CASE

A 31-year-old white man with developmental delay and a history of epilepsy was seen in February 2008 with multiple warts on his hands that had been present for several years. He had previously been treated with podophyllin, 2 different concentrations of salicylic acid (25% and 40%), and oral cimetidine, and his regular medications included lamotrigine, valproate, topiramate, and levetiracetam. He denied other risk factors for human immunodeficiency virus (HIV) or AIDS and lived at home with his parents. He also denied a history of other autoimmune conditions and allergies and had no relevant family history of other illnesses or dermatologic conditions.

On examination, we found that he had multiple hyperkeratotic warty lesions on the dorsal and palmar aspects of his hands bilaterally (Figure 1). In addition, he had multiple warts on his chin, both knees, and right third metatarsophalangeal joint. In total, he had about 30 warts, the largest of which was on the right thumb.

Several additional treatments were tried, including cryotherapy and 6 weeks of nightly application of imiquimod cream. We considered acitretin therapy, but this was not initiated owing to his neurologists' concerns about potential interactions with his antiepileptic medications.

Owing to the persistence and extensive nature of the warts, we performed a complete blood cell count; tests for electrolyte, urea, creatinine, and fasting glucose levels; liver function tests; thyroid function tests; and an HIV screen, the results of which were all normal. No human papillomavirus (HPV) typing was performed. A genetic underlying immune deficiency was thought to be very unlikely, given his relatively older age at presentation. The patient denied having a sexual partner, and no genital warts were found on examination. The patient and his family also denied a history of genital warts.

THERAPEUTIC CHALLENGE

Based on anecdotal evidence of treatment of warts with Gardasil (CSL Biotherapies, Melbourne, Australia), a recombinant quadrivalent HPV vaccine, the patient was prescribed the vaccine to be injected into his arm by his family practitioner in 3 doses at 0, 2, and 6 months.

SOLUTION

The patient returned for review 4 weeks, 18 weeks, 8 months, and 18 months after his initial examination and pretreatment with the vaccine. Four weeks after the first injection, the warts had improved substantially, particularly on his hands and knees. Ten weeks after his second injection, further substantial remission of several warts was noted. Approximately 4 months after commencement of the vaccine injections, there was more improvement and further regression of his warts. The areas substantially affected by cutaneous warts prior to vaccine administration, such as his hands, showed complete regression at 8 months (Figure 2). By 8 months, the patient showed complete regression of all 30 of his warts, and almost 18 months after the initial treatment with the vaccine, the patient was still free of all warts. No additional treatments were used during the follow-up period, and no warts were present 18 months after his initial treatment with the vaccine.

COMMENT

Human papillomavirus is associated with cervical and vulvovaginal cancers, genital warts, and precancerous dysplasia. Several studies have confirmed the role of a prophylactic quadrivalent HPV vaccine (HPV types 6, 11, 16, and 18) in the prevention of HPV-associated precancerous and cancerous lesions. The quadrivalent, inactivated HPV vaccine has been shown to be from 95% to 100% effective in the prevention of HPV-
6–, -11–, -16–, and -18–related cervical and genital disease in young, HPV-naive women aged between 16 and 26 years. The quadrivalent HPV vaccine had a protective effect against neoplasia in women testing positive for HPV-1 through -3. This vaccine is now routinely recommended for female patients aged between 11 and 26 years. The vaccination schedule involves the administration of 3 injections at baseline, 2 months, and 6 months.

While many studies have concluded that HPV vaccines are highly efficacious in the prevention of genital HPV infection, there have been no clinical trials done to specifically address whether the HPV-16 vaccines can treat multiple common warts; this has been addressed only peripherally in other trials of the HPV vaccine for genital HPV and/or cervical cancer.1–5 Recently, Albarrán Y Carvajal and colleagues6 published the results of a phase 1 and 2 study investigating MVA E2 recombinant vaccine (modified vaccinia virus) in the treatment of HPV infections in men with intraurethral flat condyloma. The vaccine was administered directly into the urethra weekly for 4 weeks, and 28 of the 30 men showed complete remission of the condyloma.6

It is important to note that spontaneous regression of warts independent of the vaccine injection can occur. Human papillomavirus vaccines have been shown to provide cross-protection against other strains that are related.7–10 We report herein a case of complete remission of highly recalcitrant cutaneous warts 8 months after commencing vaccine injections in the usual manner.

Treatments for HPV infection may include salicylic acid, trichloroacetic acid, bichloroacetic acid, cryotherapy, podophyllin resin, podophyllotoxin, imiquimod, carbon dioxide laser, and surgical techniques. A published report has documented remission of genital warts in patients after administration of the MVA E2 vaccine,6 but current guidelines support the use of the vaccine for prevention of infection.1–5 The present case highlights the potential use of the vaccine for the treatment of extensive common warts. There might be some cross-reactivity of antigenic epitopes in the HPV types covered by the vaccine and other HPV types responsible for common warts. Since patients with multiple warts are often in the preteen or young teenage category, there could be a double benefit in prescribing wart virus vaccines to such patients. Boys given the vaccine prior to sexual activity would reduce their chance of developing genital warts in the first place.

Complete remission of cutaneous warts after recombinant quadrivalent HPV vaccine administration has not been reported previously, to our knowledge, and the present case suggests that a prospective randomized controlled trial of the vaccine would be worthwhile to conduct in otherwise healthy patients with multiple, recalcitrant hand, plantar, or even genital warts. The trials thus far have had as their primary outcome measure cervical cancer, and patients with warts have only incidentally been included. Hence, there have been no placebo-controlled randomized controlled trials of this vaccine for the elimination of warts.

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Correspondence: Dedee F. Murrell, MA, BM, MD, FAAD, Department of Dermatology, St George Hospital, University of New South Wales, Kogarah, Sydney, New South Wales 2217, Australia (d.murrell@unsw.edu.au).
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