Remission of verruca vulgaris following incisional punch biopsy

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We report the case of a 53-year-old man who presented with multiple large areas of thickened, hyperkeratotic, papillomatous filiform fissuring plaques involving multiple fingers consistent with severe palmar warts (Fig. 1). The lesions had been present for 6 years, and were recalcitrant to previous topical treatments. The lesion had previously been smaller and managed with cryotherapy in primary care but this approach was no longer effective. The patient was otherwise generally well and was not immunosuppressed.

We performed two 4-mm punch biopsy incisions in the central area of the plaques. Approximately 2 mL of 1% lidocaine with no epinephrine was used as local anaesthetic. The incisions were made to the depth of the dermis until a small amount of bleeding was elicited while the punch incision ‘plug’ was left in situ. The wound was covered with petroleum jelly and a self-adhesive absorbent dressing, which was kept in place for 48 h and then removed to allow for wound cleaning with cooled boiled water. A new dressing was replaced daily until the wound was dry and scabbed (7–10 days). The patient reported minimal pain during recovery and noted remission beginning from Week 2 with clearance of the large plaques by Week 6 after the procedure (Fig. 2a,b). There had been no recurrence of the large plaques at the 6-month follow-up.

Verruca vulgaris (common wart) is a benign hyperkeratotic proliferation of the epidermis caused by the

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human papillomavirus (HPV). Warts are common and the infection is usually contracted in childhood. Warts can spontaneously resolve, but warts in adulthood are more stubborn and difficult to treat. They are most commonly located on the hands and fingers, and can cause physical and psychosocial disturbance to affected individuals.

If the lesions do not spontaneously resolve, several treatments are available. Initially, the wart can be softened with water and the hyperkeratosis can be pared with a pumice stone or file. Topical treatments such as salicylic acid (SA) can be applied to further reduce this keratotic buildup. A Cochrane meta and pooled analysis reported that a variety of SA concentrations (30%, 40%, 50%) alone or in combination with cryotherapy or other topicals can result in clearance rates of up to 69%. Use of a liquid nitrogen spray gun at 2-week intervals has also resulted in clearance rates of up to 75%. Multiple ‘aggressive’ freezes (10 s) are reported as more effective than short freezes, but not unexpectedly result in more pain and blistering.³

For larger lesions, surgery can be considered. The difficulty in our patient was not size alone but also location, as the lesion was over a very mobile phalangeal joint, which would make wound recovery difficult. Furthermore, surgery can also frequently fail due to ‘reseeding’ of the surgical margin at the time of excision. Ablative lasers can also be useful but are limited by access to therapy and means exposure risk to the operator of virus-containing laser plumes.

The method of using a punch biopsy has previously been described, with complete remission of a large plantar wart.⁴ Autoimplantation is another alternative surgical treatment option, and involves the paring of wart tissue from the cutis and introducing it to the subcutis in an area of unaffected skin. An Indian study showed resolution in 74.1% (20/27) of patients recorded at the 3-month follow-up.⁵

HPV infection occurs when the virus gains access to the basal epidermal cells via a defective barrier, i.e. following trauma. Once incorporated into the cell genome, replication releases the viral proteins E6 and E7, which directly influence the cell cycle mechanics and results in excessive cell proliferation, manifesting clinically as hyperkeratosis. E7 can also downregulate antigen expression, hindering the creation of major histocompatibility class 1 molecules and making the humoral response less effective.⁶,⁷ The virus avoids detection by incorporating only a small amount of DNA into the cell genome and maintaining very low levels of oncogene expression. Its location within the epidermis gives it barrier protection from the host circulation. Eradication of the virus is attributed to exposure of viral antigens to the host circulating immunity and the development of a delayed immune response. It is primarily a T-cell humoral response that is stimulated by the virus, and persistent infection can be seen in patients with a diminished T-cell population (HIV infection, post-chemotherapy).⁷ By creating an incision through the epidermis and allowing bleeding from dermal vessels to reach the lesion, viral antigens are exposed to host immunity and stimulate a reaction. Humoral immunity and lesion resolution can be seen in a matter of weeks. This response is effective in reducing the size and extent of the infection.

Although invasive, we consider this approach to cause minimal disturbance to the patient’s digits and thus not overtly impede their activities of daily life. A single procedure has proven effective, and using the technique has prevented the need for repeated painful cryotherapy or invasive surgery. The patient has reported that the only discomfort was the local anaesthetic. This may be an ideal technique for large warts as it is simple, cheap and effective, and has minimal adverse effects.

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CPD questions

Learning objective
To gain up-to-date knowledge on the treatment and location of cutaneous warts.

Question 1
Which of the following topical agents can be effective in cutaneous warts?
(a) Calcitriol.
(b) Clobetasol propionate.
(c) Paraffin gel.
(d) Salicylic acid.
(e) Tacrolimus.

Question 2
Where does verruca vulgaris tend to occur in healthy individuals?
(a) Back.
(b) Fingers.
(c) Chest.
(d) Flexural areas.
(e) Neck.

Instructions for answering questions
This learning activity is freely available online at http://www.wileyhealthlearning.com/ced

Users are encouraged to
• Read the article in print or online, paying particular attention to the learning points and any author conflict of interest disclosures.
• Reflect on the article.
• Register or login online at http://www.wileyhealthlearning.com/ced and answer the CPD questions.
• Complete the required evaluation component of the activity.

Once the test is passed, you will receive a certificate and the learning activity can be added to your RCP CPD diary as a self-certified entry.
This activity will be available for CPD credit for 2 years following its publication date. At that time, it will be reviewed and potentially updated and extended for an additional period.