

VIRAL WARTS - GOING, GOING, GONE!

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INTRODUCTION

Cutaneous viral warts are caused by infection of the epidermis with human papilloma virus (HPV). It is also possible for viral warts to occur on mucosal surfaces namely genital, oral and laryngeal mucosa, but these will not be discussed in this article. The appearance of the lesions is influenced by the HPV type (strain), as well as by environmental and host factors. Viral warts are typically self-limiting in nature, however their resolution can be speeded up by active intervention.

EPIDEMIOLOGY & CLINICAL CHARACTERISTICS

Viral warts occur at any age but are somewhat more common in children and adolescents, the UK prevalence being in the region of 3.9 - 4.9% for this age group¹. Although no accurate statistics are available, the prevalence for the Maltese Islands is not likely to be low when one considers that 30 - 40% of all new case referrals to the dermatology department concern 'warts'.

Warts are spread by direct or indirect contact. Impairment of the epithelial barrier function by trauma (such as abrasions and cuts), maceration or both, greatly predispose to inoculation of the virus. Plantar warts are commonly acquired from swimming pool or shower room floors. Nail biting and habitual thumb sucking facilitate spread of common warts across periungual skin. Shaving propagates spread of warts in the beard area. Occupational handlers of meat, fish and poultry have a high incidence of hand warts, better known as butcher's warts, due to cutaneous injury and prolonged contact with wet flesh and water.

Once warts develop, the body mounts a humoral immune response against the HPV, resulting in eventual clearance of lesions in immunocompetent individuals. According to various studies, spontaneous clearance of warts occurs in 23% at 2 months, 30% at 3 months, and 65 - 78% at 2 years^{2,3}. Plantar and periungual warts tend to be the most persistent forms of warts, and likewise most recalcitrant to treatment. The different clinical forms of cutaneous warts are described in table 1.

Plantar warts must be distinguished from callosities which are ill-defined areas of waxy, yellowish thickening, that on paring reveal no black dots. Black dots, typically seen in viral warts, represent thrombosed dermal capillaries. Corns occur on pressure points and are usually smaller and painful with a central plug. Paring is therefore mandatory in order to clarify the diagnosis of plantar horny lesions, and it is ultimately the treatment of choice for callosities and corns.

TREATMENT

There is no single treatment that is 100% effective. It is a valid management option to leave warts untreated if this acceptable to the patient or the parents in case of children. However, plantar warts can be painful and hand warts sufficiently unsightly to affect school attendance or cause occupational difficulty. Destructive treatment may initially stimulates new neighbouring warts to develop (koebnerisation).

The aims of treatment are:

- To remove the wart with no recurrence
- Produce no scars
- Induce life-long immunity

Indications for treatment are:

- Pain (when acute, treat underlying secondary bacterial infection with oral antibiotic before embarking on destructive therapy)
- Interference with function
- Cosmetic embarrassment
- Risk of malignancy (in case of immunosuppressed patients and genital warts)

Keratolytic agents containing salicylic acid act by slowly destroying the virus-infected epidermis. The resulting mild irritation may stimulate an immune response. Salicylic acid alone has been shown to clear 67% hand warts and 84% plantar warts in 12 weeks⁴. Before daily application of wart paints, excess keratin should be pared away with a nail file or an emery board, preferably after bathing. Colloidon based products form an occlusive film that should be peeled off before re-application. Salicylic acid with podophyllin in ointment base is also available, and applied under occlusive adhesive plaster, this preparation is particularly useful for plantar warts. Alternate day application for up to 2 weeks at a time is recommended in view of the severe inflammatory reaction that this preparation tends to provoke. If indicated, further courses may be dispensed only after the inflammation has settled and the macerated necrotic tissue has been debrided. Keratolytic wart paints should never be prescribed for lesions on the face, neck, or flexures

in view of the severe irritation they produce in such areas.

Cryotherapy nowadays carried out with liquid nitrogen at -196°C , is believed to induce wart clearance by simple necrotic destruction of HPV-infected keratinocytes, or possibly by inducing local inflammation and consequent development of an effective cell-mediated immune response. Destruction of warts by freezing every 3 weeks can give clearance rates for hand warts of 69% in 12 weeks⁴. Two freeze thaw cycles per treatment session has been shown to improve clearance in plantar warts but not in hand warts⁵. Cryotherapy is a painful procedure and it is unlikely that a young child will co-operate even despite attempting to reduce discomfort by means of topical anaesthesia (with EMLA cream). Blisters resulting from cryotherapy normally resolve within 7 - 10 days. Although cryotherapy does not tend to scar, transient hypo- and hyperpigmentation can occur particularly in darker-skinned individuals.

Curettage and cautery is particularly useful for filiform warts. When applied to common or plantar warts, this surgical approach constitutes a rather messy and gruesome procedure, and invariably produces scarring. This procedure requires a local anaesthetic injection.

Tretinoin cream has been used successfully in the case of plane warts. Daily application however often produces skin irritation, which may necessitate a reduction in the frequency of application.

Topical sensitization with **Diphencyprone** has proved to be an effective treatment for recalcitrant warts, particularly plantar and periungual warts. The immune response it provokes produces life-long immunity to the HPV. The drawbacks are that some patients cannot be sensitized whilst others particularly those with an atopic predisposition get troublesome eczematous reactions⁶.

Other **miscellaneous** less commonly utilized therapies that have been used for treating viral warts with varying success rates include intralesional bleomycin, intralesional and systemic interferon, high dose cimetidine (2400 g daily x 3 months), pulsed dye laser, and carbon dioxide laser destruction.

CONCLUSION

Patients should be informed that viral warts tend to resolve spontaneously. If treatment is indicated or desired, the value of simple properly administered topical keratolytic therapy should never be underestimated. Patients not responding to an adequate course of topical keratolytic therapy (up to 3 months) may benefit from referral to a dermatologist for more aggressive destructive therapy or

immunotherapy. A conservative approach is preferred in the case of young children.

Table 1

| <i>Clinical type</i> | <i>Morphology and associated features</i> |
|------------------------------------|--|
| Common warts | Firm, rough keratotic papules and nodules often demonstrating 'black dots'. Anywhere on the skin. May be single or grouped. |
| Plane warts (Flat warts) | 2-4 mm in diameter, flesh coloured, slightly raised flat-topped, non scaly lesions. Most common on face and dorsum of hands. |
| Plantar warts (Verrucas) | May start as sago grain-like papules which develop a more typical keratotic surface with a collar of thickened keratin. Black dots usually present. Often develop on pressure points and may hence cause pain on weight-bearing. |
| Mosaic warts | Occur when palmar or plantar warts coalesce into large plaques. Often painless. |
| Filiform warts (digitate warts) | Consist of prominent finger-like projections with keratotic tips and black dots. Most common on face and neck, especially in males. |
| Myrmecia | Resemble deep clear vesicles. Found on palms and soles. |

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