

Warts: Clinical type and treatment

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Highlights / Hoogtepunte

- Make a clinical diagnosis of warts
- Understand the nature and causes of warts at different sites.
- The principles and methods of fighting the papillomatous battle.
- Maak 'n kliniese diagnose van vratte.
- Verstaan die aard en oorsake van vratte op verskillende plekke.
- Die beginsels en metodes om die papillomateuse aanslag hok te slaan.

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INTRODUCTION

Warts (verrucae) are caused by infection with human papillomaviruses (HPV). Human papillomaviruses are widespread in nature and a great part of the population has warts at one time or another.

Warts are benign, often spontaneously resolving, epidermal proliferations. The clinical lesions resulting from HPV infection can be divided into two broad categories, cutaneous and extracutaneous. The cutaneous lesions include common warts (verruca vulgaris), filiform warts, plane warts (verruca juvenilis), plantar warts (myrmecia and mosaic warts), epidermodyplasia verruciformis and anogenital warts.

All the cutaneous warts listed above and of the extracutaneous ones, oral common warts and focal epithelial hyperplasia will be discussed in this article.

There are many types of HPV. Identification of the strain, not routinely performed in daily clinical practice, is important as, while most strains are benign, certain may initiate malignant changes. Different types of warts are associated with certain HPV strains.

Common Warts (most often HPV-2 and HPV-4)

They are rough, keratotic papules that may appear singly or grouped on any

cutaneous site. They are most often located on the dorsal aspects of the hands and fingers. (Fig. 1), (Fig. 2)

Figure 1: A single common wart after ear piercing



Figure 2: Multiple common warts



Figure 3: Periungual common warts



Periungual common warts (Fig. 3) are often painful, may involve the nail bed and cause a nail dystrophy.

Filiform warts

These warts are slender with filiform projections and are mainly located on the neck and on the eyelids.

Plane warts

Plane warts (juvenile) (most often HPV-3 and HPV-10) (Fig. 4) are generally multiple, slightly elevated, smooth papules occurring most often on the face, hands, neck and legs of children. They may group and a linear arrangement implying a role of trauma (Koebner phenomenon) is common.

Figure 4: Plane warts



Plantar warts

There are two main types of plantar warts. Deep and painful, usually single warts (HPV-1) are called myrmecia (ant-hill) due to their dome-shaped appearance. (Fig. 5)

Figure 5: Deep plantar wart

More superficial (HPV-2 and HPV-4) numerous plantar warts are usually nonpainful. They often coalesce into large plaques. (Fig. 6) Plantar warts most often occur beneath the pressure points such as the heel or metatarsal heads.

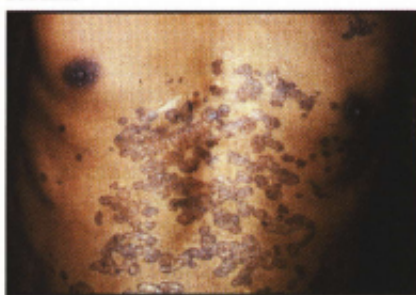
Figure 6: Multiple mosaic plantar warts

The diagnosis of common and plane warts is easy - most patients make the correct diagnosis themselves but plantar warts are often mistaken for corns. Paring down a plantar callus will reveal the characteristic speckled appearance of the plantar wart.

Epidermodysplasia verruciformis
(most often HPV-3, HPV-5, HPV-8)

This is a rare, lifelong, cutaneous

disorder characterized by persistent refractory HPV infection manifesting as widely disseminate, flat, wart-like lesions and erythematous, hyperpigmented or hypopigmented macules. (Fig. 7)

Figure 7: Epidermodysplasia verruciformis

Approximately one third of light-skinned individuals with *epidermodysplasia verruciformis* develop non-melanoma skin cancers on sun-exposed areas. This malignant transformation is much less common in African patients though the same HPV strains with high oncogenic potential have been detected in their lesions.¹ *Epidermodysplasia verruciformis* is a multifactorial disease in which viral, genetic, immunological and environmental factors play a role.

Anogenital warts

Anogenital warts can be divided into hyperplastic lesions (*condylomata acuminata*), sessile papules and common wart - like lesions.

Condylomata acuminata (HPV-6, HPV-11, HPV-16, HPV-18) are typi-

cally soft, fragile, pink to flesh-coloured lesions found on moist areas like the glans penis, inner surface of the prepuce, urethral meatus, anal mucosa, perianal region and labia. (Fig. 8) These lesions can become large, grossly exophytic and cauliflower-like.

Figure 8: Condylomata acuminata

The sessile papules (HPV-2, HPV-4) and common warts are seen on the penile shaft.

Common warts similar to their cutaneous counterparts, though less keratotic, can occur in the oral cavity. (Fig. 9)

Figure 9: Common warts inside the mouth

Abbott launches the Reductil 102030 weight loss program

Abbott recently launched its Reductil 10-20-30 weight loss programme. "Consumers need to be made aware that being overweight can result in their developing Metabolic Syndrome - a medical condition that could result in diabetes, cardiovascular disease, and even cancer" says Bernice Grusd, product manager at Abbott. "Losing weight may be the most rewarding achievement for an overweight person - but studies have shown that most weight loss programmes do not provide long term weight loss. This yo-yoing of weight often leaves a person depressed and demotivated". The Reductil 10-20-30 programme, launched on Radio 702 in July, is aimed at

helping consumers understand Metabolic Syndrome, and to give them the tools to take weight off and keep it off. Recent studies have shown that a 5-10% weight loss is sufficient to reduce the risk of developing Type II diabetes, hypertension, hypercholesterolaemia and cardiovascular disease. The programme is designed to encourage overweight patients to see their doctors, and includes prescription medication (Reductil) and a lifestyle change programme.

For more information call Bernice Grusd, Product Manager, Reductil, on (011) 858 2000.



Table I: Treatment Options

	First Option	Second Option	Third Option	Fourth Option
Common warts	Leave untreated. Many resolve	Keratolytics	Cryotherapy	Curettage
Periungual common warts	Combination-cryotherapy followed by Imiquimod cream under occlusion	Imiquimod cream under occlusion	Repeated superficial cryotherapy	
Solitary common wart on the face	Leave untreated. Often resolves	Curettage	Cryotherapy	
Plane warts	Leave untreated	Topical retinoic acid	Cryotherapy	
Genital warts	Imiquimod cream	Podophyllin Podophyllotoxin	Cryotherapy	Curettage
Plantar wart Mosaic	Keratolytics	Formaldehyde soaks	Cryotherapy	
Plantar warts Deep	Keratolytics	Cryotherapy	Curettage	

Focal epithelial hyperplasia (Heck's disease) (HPV-13, PV-32)

Focal epithelial hyperplasia affects the oral mucosa. It occurs in certain ethnic groups (also in Cape Coloureds²) and therefore a genetic cofactor is probable. Most often labial and buccal mucosae are affected with multiple pinpoint to peaisized soft ovoid papules.

TREATMENT

The nature of warts is unpredictable. They often fail to disappear with treatment or they recur after apparent cure. Some warts resolve spontaneously and thus the evaluation of treatment may be difficult. There is no way to prevent warts and both patients and physicians often become frustrated by an apparent endless appearance of new warts.

Systemic medications are not successful and locally destructive methods are the mainstay of therapy.

The aim is to destroy the wart and to spare the normal skin. Treatment shouldn't cause distress to the patient. This excludes radiotherapy and systemic immunotherapy. Local immunotherapy with Imiquimod cream will be discussed later.

Scarring should be avoided, thus there is no place for excisions and overenthusiastic electrodesiccation.

Treatment should cause minimal pain and inconvenience.

Several factors influence the response of warts to treatment

1. Warts in children respond more readily than in adults.
2. Deep plantar warts (myrmecia) are easier to treat than mosaic warts.
3. Single warts and those of short duration disappear more readily than multiple and long lasting ones.
4. Treatments are generally not entirely successful in immunocompromised patients, those on long term immunosuppression, organ transplant recipients and HIV-infected patients.

It is very important to make patients understand that warts are unpredictable and that they should have a realistic view of the speed of cure. Twelve weeks, not shorter, is a realistic period of time in which to expect warts to disappear with treatment.

Sometimes a wart persists, regardless how much it is treated. A biopsy may be needed to confirm the diagnosis of a wart (squamous cell carcinoma may look like a wart).

Treatment options:

Table I summarises the treatment options of different types of warts.

Cryotherapy

Freezing with liquid nitrogen apparently does not kill human papillomaviruses. It destroys the tissue in which the virus lives and possibly enhances the host's immune response.

Cryotherapy is effective for warts on the face, hands, arms and legs. The wart and a small rim of apparently normal tissue have to be frozen. The freeze time ranges from 10 to 30 seconds. Repeated liquid nitrogen treatments are usually needed, since one freeze seldom leads to resolution of the wart. The interval between freezings should not be longer than 3 weeks, in anogenital warts even shorter as they proliferate rapidly. Repeated freezing avoids the need to freeze deeply thus minimising scarring. Combining liquid nitrogen therapy with local keratolytics (salicylic acid/ lactic acid) on days between freezing increases the cure rate.

Cryotherapy is effective in plantar warts. Paring of the keratotic surface before freezing and a freeze-thaw-second freeze cycle is more effective than a single freeze.

Liquid nitrogen therapy of the lesions on the feet can, however, produce problems, painful blisters and even permanent, painful scars. Similar efficacy is achieved with the spray and cotton wool method when treating common warts.

Curettage

Curettage should only be used when other methods fail. It is painful and there is a risk of scarring. Curettage is effectively used for solitary facial warts in adults.

Keratolytics

Keratolytic agents act by increasing shedding of the infected keratinocytes. In South Africa DUOFILM preparation containing salicylic acid 16.7% and lactic acid 15.03% in colodion base is most often used.

The crucial thing is for the patient to understand the principles of treatment.

The agent is applied most conveniently at bedtime. If the wart surface is covered with hard keratotic tissue or dead debris, remove it using a pumice stone or the tip of a metal nail file. Later apply a few drops of the solution using the applicator. Colodion-based products dry on the wart and do not require dressings. Continue the same procedure on the following days. Do not treat if the wart is painful – stop the treatment for one or two days.

Formaldehyde soaks

When there are multiple plantar warts (mosaic), application of keratolytics is not practical. Diluted formaldehyde soaks (2-15%) are useful. The surrounding normal skin must be protected by applying vaseline. The soaks are applied to the skin for 10-15 minutes

every evening. The warts should be pared every few days. Treatment should be stopped if the warts become painful.

Podophyllin

Podophyllin compound paint (15-20%) is commonly used for friable genital warts. Podophyllin is very toxic and should be applied by trained staff and not by the patient.

Apply small amounts with a cotton wool bud. Dust with talcum powder immediately after application. The patient is advised to wash off the solution 2-3 hours after application. Later, on subsequent visits, leave the solution for an increasing length of time - up to 8 hours. Apply at weekly or fortnightly intervals.

Application of podophyllin is contraindicated in children and in pregnancy. Podophyllotoxin (Wartec), available as a solution, is less toxic and may be used at home. It should be applied twice daily for 3 days and the application can be repeated for residual lesions after one week.

Imiquimod

Imiquimod (5% Aldara cream) is a topical immune response modifier. It has no direct antiviral effect. It induces the release of cytokines, principally Interferon-alfa, but also tumour necrosis factor-alfa and several interleukins. Thus, its antiviral action stems from enhancement of cell-mediated immunity.

Originally imiquimod was indicated for the treatment of external genital and perianal warts. Subsequently it has also been found effective in other types of warts including plantar and periungual and also warts in immunocompromised patients.⁵

A limiting factor in the treatment with imiquimod is its high cost.

However, its non-invasive action and the freedom from pain and scarring experienced with other therapies may balance the high cost. There is no effective treatment for the multitude of warts in *epidermodysplasia verruciformis*. Strict sun protection may reduce the number of developing tumours and the malignant growths should be timeously removed. □

Please refer to the CPD Questionnaire on page 71

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