

# Molluscum contagiosum and warts

**Molluscum contagiosum and warts are common viral infections that usually can be managed in the general practice setting. Patients should be aware of the benign nature of these conditions and the likelihood of spontaneous resolution.**

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## Molluscum contagiosum

Molluscum contagiosum is a highly contagious but benign viral infection of the skin that is seen very often in the community. It is particularly common in children; in adults it is often a sexually acquired infection. It is caused by a double stranded DNA poxvirus that lives and replicates within cells of the epidermis.

## Transmission and incubation

Transmission of the virus occurs via direct contact with infected skin. It has been shown also to occur through the use of school swimming pools and the sharing of bathing items such as towels and sponges.<sup>1</sup> Parents often ask whether they may contract the infection from their children. Although theoretically this is possible, it rarely occurs, presumably as a result of immunity acquired in childhood. The incubation period may be as short as two weeks or up to several months.

## Appearance

Lesions appear as dome-shaped papules with an umbilicated surface and an opaque central core. Size may vary from a few millimetres to a centimetre. In children, lesions usually occur on the

trunk and limbs, often in the flexures. Buttock and genital lesions can also be seen in children, and do not necessarily imply sexual abuse unless there are other relevant findings.

Although facial lesions are uncommon in immune competent individuals, they may be seen on the eyelid and mucosal membranes. In patients with immune deficiency, such as HIV infection or after immunosuppressive therapy, widespread lesions or giant facial molluscum may occur. Molluscum contagiosum may also be seen in the genital and suprapubic skin of (usually young) adults due to sexual transmission (Figure 1).

The number and duration of both individual molluscum lesions and episodes overall may vary greatly between patients. Episodes usually last for several months but rarely may persist for several years. Lesions may resolve spontaneously or after trauma. This is usually accompanied by an inflammatory response that may look alarming to parents; however, scarring is not usually seen.

In about 10% of cases molluscum contagiosum may be complicated by eczema, usually in patients who are atopic. Often this is the reason for specialist referral.

## IN SUMMARY

- Molluscum contagiosum and most warts resolve spontaneously over time without scarring.
- Counselling parents of children with these infections may be all that is necessary.
- Treatment methods for these infections have limitations in terms of both response rates and side effects.
- Avoid treatments that may cause significant side effects or are expensive.
- Patients with sexually transmitted anogenital warts need counselling regarding transmission; the need for regular cervical smears in female patients is important.

## Diagnosis

The diagnosis of molluscum contagiosum is usually obvious clinically. Even when significant inflammation masks classic features, smaller lesions at an earlier stage of evolution are often found elsewhere in the same patient. Direct microscopy of a curetted lesion will show typical molluscum bodies, although this is rarely used for diagnosis in clinical practice. Large solitary lesions may not be clinically diagnostic, and histopathology may be necessary.

In the differential diagnosis, keratoacanthomas have a typical history of rapid growth over several weeks followed by a static phase, and then resolution over several weeks, leaving a crenellated scar. Multiple lesions occur only in exceptional circumstances. Basal cell carcinomas have overlying telangiectasia and similarly to keratoacanthomas occur in older patients. Pyogenic granulomas appear more vascular and may have a peripheral collarette of scale.

## Treatment

Generally, the best management for children with molluscum contagiosum is to explain to their parents the natural history of the infection and await spontaneous resolution. Treatment may cause pain and trauma in children. Scratching may cause autoinoculation and should be avoided, as should the sharing of bath towels and sponges until lesions have cleared. Parents should be warned of the potential to acquire infection from swimming pools, but keeping children home from school is impractical and unnecessary. Treatment of any surrounding eczema is advisable. If the use of soap substitute and bland emollient alone is not successful, a weak topical corticosteroid, such as hydrocortisone 1% twice to three times daily, may be used.

In older children and adults light cryotherapy (aiming for ice formation) may be well tolerated. Squeezing or extracting the central core of the lesions may speed resolution. Application of tape or a bandaid for a week and rapid removal has been suggested as an option in children.

Topical retinoids may be effective, but can cause irritation. More recently topical imiquimod has been used successfully in trials in patients with HIV and in children, although this product is not currently licensed for molluscum contagiosum.



Therapies that are now rarely used include curettage and diathermy, cantharadin (which needs to be imported by the treating doctor) and salicylic acid-type preparations (which may cause significant irritation).

If molluscum contagiosum has been sexually acquired, counselling regarding transmission and treatment of partners is appropriate.

## Warts

Warts are one of the most common viral infections in our community and are caused by human papilloma virus (HPV), a double stranded DNA virus that infects squamous cells of the epidermis and mucosal surfaces. The specific HPV type dictates the infection location and determines differences in behaviour and capacity for malignant transformation.

## Transmission and incubation

Transmission of HPV occurs via direct contact or indirectly through contact with contaminated surfaces such as gym change room floors or public swimming pool wet areas. Traumatized or macerated skin is more vulnerable to infection; sexual contact, shaving and fingernail biting are common means of spreading warts.

Incubation periods for warts may vary from months to years. This is most important when counselling patients about sexual transmission and in rare cases in small children with genital warts that may have been acquired during delivery through the mother's infected birth canal.

Figure 1. Sexually acquired molluscum contagiosum in the suprapubic skin of a young adult.

continued



Figure 2. Multiple common warts on arm.



Figure 3. Large wart with fissuring.

## Types of warts

Common warts (HPV types 1, 2 and 4) Clinically, common warts are variable sized papules with a rough or filiform surface. They are often seen on the hands but

may occur also on the face, trunk and limbs (Figure 2). They are usually asymptomatic but if large may contain painful fissures (Figure 3) or splits. They can be painful also if they occur around nail folds.

Common warts resolve spontaneously within two years in about 70% of cases.

pigmented or filiform. Nonkeratinised warts appear pink and moist on mucosal surfaces. As they are typically sexually transmitted, areas of maximal friction are often involved. Symptoms are uncommon. A number of types are associated with the development of dysplasia and malignancy, which may take the form of *in situ* or invasive malignancy. In women the presence of anogenital HPV should trigger investigation for cervical dysplasia.

## Treatment modalities for warts

The following wart treatments have been used but all are not necessarily now favoured, nor have equal merit; refer to the text for further information.

### Topical agents

- Salicylic acid-based preparations
- Monochloroacetic and trichloroacetic acid
- Formalin soaks
- Glutaraldehyde
- Retinoids
- Imiquimod

### Intralesional agents

- Bleomycin
- Interferon

### Oral agents

- Cimetidine

### Cryotherapy

### Photodynamic therapy

### Contact immunotherapy

- Dinitrochlorobenzene
- Diphencyprone

### Surgery

- Excision
- Curettage and cauterization
- Electrodessication

## Plane warts (HPV types 3 and 10)

Plane warts are flat, often subtle, brownish yellow or skin coloured lesions seen on the dorsum of the hands, face, knees or shins. Koebner's phenomenon may occur, resulting in linear lesions within areas of trauma.

## Plantar warts (HPV types 1, 2 and 4)

Classically painful and in areas of pressure, plantar warts appear as hyperkeratotic raised areas that when pared reveal multiple black dots or bleeding points and loss of normal skin markings (dermatoglyphics; Figure 4). Callosities can be differentiated from these by the preservation of skin markings and the lack of bleeding points on paring. The mosaic form is often painless and refers to a cluster of closely spaced warts.

In younger children plantar warts may resolve within six months, but in older patients they may persist for years.

## Anogenital warts (HPV types 6, 11, 16 and 18)

Anogenital warts may be keratinised and resemble common warts, or they may be

## Treatment

Despite a large number of treatment modalities used for warts over the years (see the box on this page), cure rates remain relatively low at about 60 to 70%, with no particular method standing out as superior. A systematic review of local treatments found poor quality evidence for the efficacy of local treatments, with only salicylic acid and dinitrochlorobenzene shown to have a beneficial effect.<sup>2</sup>

Treatment modalities that have been used for warts are discussed below. With respect to genital warts, the following information does not include treatment of dysplasia due to oncogenic types.

## Salicylic acid

Salicylic acid-based preparations are useful for common warts on the hands and body and plantar warts, but they are not suitable for use on the face or anogenital area because they can cause irritation.

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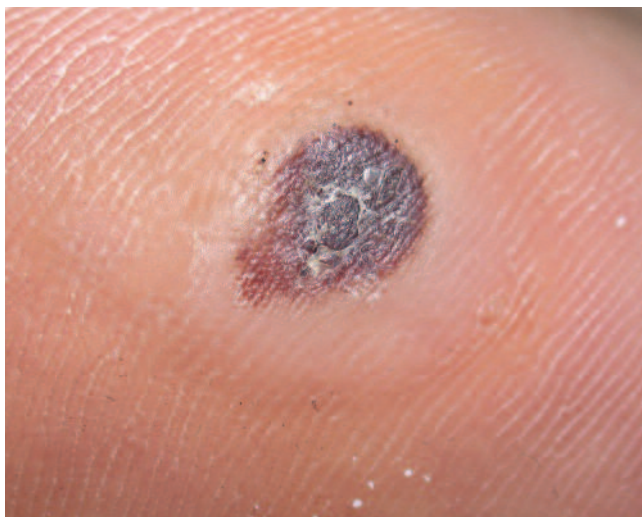


Figure 4. Treated plantar wart showing haemorrhage and loss of normal skin markings (dermatoglyphics).



Figure 5. A common wart two weeks after cryotherapy showing thrombosed vessels.

Over the counter preparations usually contain 15 to 26% salicylic acid with or without lactic acid, often with a collodion base for quick drying. Collodion products are contraindicated in patients allergic to colophony.

The wart should be pared daily before the product is applied to only the abnormal skin. Care should be taken to avoid trauma to surrounding skin, which may spread the virus. Patients should be told that successful treatment might take three months.

Upton's paste contains salicylic acid and trichloroacetic acid in a glycerol base, making a thick paste. This is applied to plantar warts, with the surrounding skin protected, and reapplied weekly after paring of the thick white hyperkeratotic material that develops.

Adhesive wart plasters contain 40% salicylic acid, and are suitable for the treatment of plantar warts.

### Monochloroacetic acid/trichloroacetic acid

Used mainly for nonfacial common warts, monochloroacetic acid and trichloroacetic acid are applied weekly in strengths of 50 to 80% under professional

supervision. These products may cause significant irritation and possible skin necrosis.

### Contact immunotherapy

A contact sensitizer such as dinitrochlorobenzene or diphencyprone is applied to normal skin to induce a contact dermatitis. Subsequently, weaker strengths of the sensitizer are applied to the wart. This method induces significant inflammation and must be carried out by trained practitioners to prevent both sensitisation of other individuals and development of widespread dermatitis. It thus has practical limitations.

### Cryotherapy

Cryotherapy is perhaps the most widely used treatment for warts but good evidence in the literature for its benefit is lacking.<sup>2</sup> There does not appear to be a significant difference in efficacy between cryogun and cotton wool bud application methods.<sup>3</sup>

Pain is a limiting factor in the use of cryotherapy in children. Longer freeze times will result in greater inflammation such as blistering and should be avoided over tendons or vessels such as those on

the sides of fingers. Intervals between treatments may vary between one and three weeks, and there does not appear to be any benefit persisting beyond three months of treatment. Figure 5 shows a common wart with thrombosed vessels two weeks after cryotherapy.

### Formalin soaks

The use of 3% formalin soaks each day to extensive mosaic warts on the feet may be helpful but is time consuming, and interdigital skin must be protected – for example, with white soft paraffin. In addition, contact sensitisation may occur with this method.

### Glutaraldehyde

Topical glutaraldehyde is available over the counter as a 10% solution for the treatment of plantar warts. Treated skin hardens and is discoloured a yellowish brown colour, which may be unacceptable cosmetically. Contact dermatitis can also occur with its use.

### Topical retinoids

Topical retinoids are most useful for the treatment of plane warts, but they may cause irritation.

### Podophyllin

Podophyllin is used mainly for mucosal anogenital warts and is generally ineffective for other types of warts. Systemic adverse effects of this topical resin can be seen with application to large or bleeding surfaces, and this treatment is contraindicated in pregnancy. This agent has been somewhat superseded recently by imiquimod.

If applied by the patient, podophyllo-toxin 0.5% is applied twice daily for three days a week, for a total of four weeks. This preparation is usually reserved for warts that are easily accessible and visible to the patient. If applied by the physician, podophyllin 10 to 40% in tincture of benzoin is applied and washed off after four hours. Treatment is repeated weekly.

### Imiquimod

Topical 5% imiquimod cream is licensed in Australia for treatment of anogenital warts. It increases local cell-mediated immunity by cytokine production, resulting in an inflammatory response in the treated area. The patient applies the treatment overnight, three times weekly for 16 weeks. Response rates of up to 79% have been reported. Nonkeratinised warts (e.g. vulval warts) tend to respond better than do keratinised warts (e.g. penile shaft warts).

Side effects of imiquimod include pruritus, erythema, burning and ulceration.

### Intralesional bleomycin

Intralesional bleomycin is reserved for persistent and painful warts on the feet but can also be used on the fingers. Local anaesthetic is often also used because the injection is painful. Bleomycin 1 mg/mL or 1 U/mL is injected directly into the wart itself until blanching is seen. A black eschar forms and may separate from the surrounding skin in a few weeks. Treatment may be repeated, but a maximum total dose is recommended.

Important potential side effects of this treatment include Raynaud's phenomenon,

nail dystrophy or loss when treating warts on digits, and urticaria.

### Intralesional interferon

Intralesional interferon has also been used to treat warts with reported success about 50%.

### Surgery

Often used in the past, surgery is now out of favour due to a high risk of recurrence of the wart in the scar, which is often painful. Curettage and cautery or electrodesiccation carry similar risks, but superficial debulking may occasionally be helpful.

### Laser

Both the pulse-dye laser and carbon dioxide laser have been used to treat warts, usually in refractory or persistent cases. Similar success and recurrence rates to conventional therapy have been found. Disadvantages of laser treatment include expense, the need for anaesthesia and a potential for scarring.

### Photodynamic therapy

Photodynamic therapy involves the application of a topical photosensitiser to a wart, followed by exposure to a light source. This results in a photodynamic reaction producing reactive oxygen species that cause cell death. Studies show that more than one treatment is usually needed for acceptable response rates.<sup>4</sup>

The requirement for multiple visits to a hospital clinic with specialist expertise and equipment makes this treatment an impractical option for most patients, and it may not be readily available. Pain is a limiting factor for the treatment of children.

### Cimetidine

Cimetidine 30 to 40 mg/kg/day has been found to be useful for extensive warts in younger children, but it does not appear to be helpful in adults. If successful, benefit is usually seen in five to eight weeks. Liver function, blood picture and electrolytes should be monitored during treatment.

## Conclusion

Most patients with molluscum contagiosum or warts can be diagnosed and managed in general practice without the need for specialist referral. Referral of patients with molluscum contagiosum may be necessary for those with giant or facial lesions, those with immunodeficiency and those in whom surrounding eczema is severe or nonresponsive to treatment. Referral for patients with warts may be necessary for problematic lesions (awkward site, large or painful lesions) that are not responding to routine treatments available in general practice.

Patients should be advised of the benign nature of molluscum contagiosum and common warts and the likelihood of spontaneous resolution without treatment within a couple of years. They should also be aware of the relatively poor success rate of available wart treatments and dissuaded from aggressive or expensive treatments that do not give any superior results, and may cause permanent side effects.

Patients with genital warts need counselling in addition to treatment. In particular, female patients should have regular Pap smears to exclude cervical dysplasia. MT

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DECLARATION OF INTEREST: None.