Supported by a grant from OraSure Technologies, Inc.
Warts & All . . .

Is that persistent lesion on your patient’s finger a callus, a wart, or a fungal infection? Can you determine—just by looking—whether a mass that covers a teenager’s toe is a wart, squamous cell carcinoma, or something else? Do you recognize the inflamed lesion on this child’s trunk? Is that a malignant lesion on this man’s face, and what treatment methods would you consider to remove it?

If it’s true that a single photo speaks a thousand words, then the images on the following pages speak volumes about such common skin lesions as warts, molluscum, seborrheic keratoses, basal cell cancers, and dermatofibromas. We’ve put together a collage of images and cases culled from the archives of Consultant and invite you to review them for the diagnostic and management tips they offer. Also, because warts are so common (the CDC estimates that 20 million people in this country are infected with genital human papillomavirus), we’ve included an article specifically on warts. The authors focus primarily on the pros and cons of currently available treatment options—and describe factors that can affect your choice of modality.

We hope you enjoy the collection—warts and all.

Susan Kweskin
Group Editor
ABSTRACT: Significant controversy exists about whether to treat warts. Recent guidelines suggest treating warts associated with pain, bleeding, pruritus, burning, disfigurement, or disablement and those that are large in size or number or that might undergo malignant transformation. Treating warts may also decrease infectivity and reduce the spread of potentially carcinogenic infections. No single treatment is uniformly effective, and results are rarely immediate. Salicylic acid is often chosen as adjunctive therapy for nonmucosal and nongenital warts; its efficacy is enhanced if occlusion is used. Vascular lesion laser therapy is useful if first-line therapies (eg, cantharidin and cryotherapy) have failed. Intralesional injections of interferon alfa have proved very effective.

Warts are common, contagious tumors that occur most frequently in children and young adults; the exact prevalence is unknown. Although they are generally benign, some types of warts can become malignant. The course of the infection is variable; many warts regress spontaneously, while others spread by autoinoculation and may recur at the same site or at other sites.

In this article, we discuss the rationale for treatment, the diagnosis of the most common types of warts, and the principal therapeutic options and modalities.

BACKGROUND
Verrucae, or warts, are epidermal tumors caused by the human papillomavirus (HPV). HPV is a nonenveloped, double-stranded DNA virus that replicates in epithelial cells; this means that HPV has a predilection for the mucosa and skin. More than 70 distinct HPV types have been recognized, each with at least a 10% genome difference. Because papillomavirinae tend to be host-specific and HPV has not been successfully grown in culture, most of the research on papillomavirus has been conducted with animal papillomaviruses.

Warts are usually transmitted by direct human-to-human contact; the incubation period and clinical presentation vary. Symptomatic disease includes flat warts (verruca plana), common warts (verruca vulgaris), filiform warts, palmar and plantar warts, periungual warts, mosaic warts, condyloma acuminata (venereal or genital warts), myrmecia, focal epithelial hyperplasia, epidermodysplasia verruciformis, and laryngeal warts.1

TREATMENT CONSIDERATIONS
The response to HPV treatment is extremely unpredictable. Moreover, significant controversy exists among clinicians about whether warts should be treated at all. The American Academy of Dermatology’s Committee on Guidelines of Care offers criteria to help determine when treatment for warts is indicated.1 Lesions requiring treatment include those associated with pain, bleeding, pruritus, burning, disfigurement, or disablement and those that are large in size or number. Treatment is sometimes undertaken...
to decrease viral load in the hope of preventing the spread of lesions and in immunocompromised patients. The patient’s preferences and the potential for scarring and recurrence must also be taken into consideration.

Whether or not one follows the guidelines, there are a number of important reasons to treat warts. First, warts have reached epidemic or even pandemic proportions. In 1990, there was an estimated 79% lifetime risk of acquiring HPV infection, with an annual incidence of 8%.1 Decreasing the burden of visible wart in a community might decrease infectivity and help stem the epidemic, although this view is controversial.

Most verrucous lesions are benign, but certain HPV infections are associated with cancer. For example, squamous cell cancer and cervical carcinoma have been associated with HPV-16, and dysplastic periangual papillomas have been shown to contain HPV-57.1,2 Epidermodysplasia verruciformis is a rare genetic condition of altered cell-mediated immunity in which HPV infection and squamous cell carcinoma develop in affected patients.

Other immunosuppressive states, both congenital and acquired, also predispose to heightened HPV infection and HPV-associated malignancies.1 The risk of malignant transformation may or may not be decreased with treatment.1 At a minimum, treatment to control the spread of HPV may reduce the spread of potentially carcinogenic infections.4

Finally, small warts are easier to treat than large warts. The best study of the natural history of warts suggests that without treatment, only 40% of patients with warts can expect disappearance of all their warts after 2 years.5 It is likely, therefore, that over several years warts will continue to enlarge, spread, and become more resistant to treatment. It is preferable to destroy clinically visible warts when they are small—and immediately treat any recurrent lesions—than to wait to see which will disappear and which will pose more serious treatment problems.

**DIAGNOSIS**

A careful full-body assessment with focused examination of suspicious skin lesions is crucial to the success of treatment. We believe that all warts should be identified and treated.

With the exception of flat warts—which have a fine, almost imperceptible roughness on the surface—HPV infections are characterized by fingerlike projections or rough popular projections and scaling that correspond to the papillomatosis noted histopathologically. The hyperkeratotic verrucous surface is the most important diagnostic feature of warts (Figure 1). Coalescence of adjacent warts often leads to a scalloped edge in larger warts. Since dilated dermal blood vessels are present within the projections, warts commonly bleed when irritated.

On palmar and plantar surfaces, it is sometimes difficult to differentiate between a clavus (corn) and a wart. If the diagnosis is in question, tap water soaks for 5 to 15 minutes will hydrate the lesion to aid visualization. A clue to the diagnosis is that a wart will interrupt normal dermatoglyphs, or skin lines. Paring of the hyperkeratotic surface helps locate the central core of a clavus, normal skin markings extending through the thickened lesion (callus), and typical pinpoint bleeding from the seeds (thrombosed capillaries) of a wart. In addition to aiding diagnosis, paring removes nonviable tissue, thus exposing the wart directly to the treatment chosen.

Although most warts can be diagnosed with a high degree of certainty based on their clinical appearance, some laboratory testing may be required. The best laboratory test for HPV infections is a biopsy. Verrucous carcinoma, blastomycosis, molluscum contagiosum, condyloma lata, and—rarely—amelanotic melanoma might be mistaken clinically for HPV but can be excluded by histopathology. When in doubt, biopsy! However, seborrheic keratoses and linear epidermal nevi must be excluded on clinical grounds, since they cannot be easily
differentiated by histopathology. HPV marker studies can also confirm the diagnosis or, in the case of genital warts, provide additional information regarding carcinogenic risk, although most clinicians find that HPV marker studies are rarely helpful in routine clinical situations.

TREATMENT MODALITIES

Once you have decided to treat a wart, there is a wide variety of options, although there is no perfect treatment. The choice of modality depends on such factors as the location, size, and type of wart as well as the patient’s wishes. You will probably feel most comfortable using 1 or 2 treatment modalities, with referral to a specialist if the response is unsatisfactory.

An overview of the available treatment modalities is given in the Table. An antiviral wart agent or vaccine is being researched but is not yet available.

It is important to emphasize that no two warts act alike and that no single treatment is uniformly effective. The patient’s immune status may alter the response to treatment. Patients often present with a wart after they have suffered with it for some time. They frequently have tried home remedies such as rubbing the wart with a potato and burying the potato in the backyard.

Most patients expect an immediate cure; inform them during the initial visit that a series of treatments and a great deal of patience are often required. We spend at least 10 additional minutes with patients to teach them about the infectious nature of warts and the rationale for each treatment option. Patients can then take an active role in treatment. They may favor a certain treatment modality or may help with the decision-making process as treatment plans are altered in subsequent visits. You and your patient thus share in the successes and failures of the treatment course(s) chosen. Art, science, and personal experience guide efforts to eradicate warts.

Destructive modalities. The following are among the most commonly used.

Salicylic acid. We recommend daily use of an over-the-counter salicylic acid 17% as an adjunctive home treatment for all nonmucosal and nongenital warts and as primary therapy for small palmar and plantar warts. The skin is soaked for 5 minutes in water and dried with a towel, and salicylic acid is applied as a gel, paint, or cream in concentrations ranging from 10% to 50%. The efficacy is increased if occlusion is used—for example, with Sal-Acid under plastic tape, Sal-Acid plasters, or Sal-Acid in collodion.

If the area becomes sensitive, decrease the frequency of application from daily to every third day. The patient’s immune status may affect the response to treatment. Patients often present with a wart after they have suffered with it for some time. They frequently have tried home remedies such as rubbing the wart with a potato and burying the potato in the backyard.

Destructive modalities

Salicylic acid, bichloroacetic/trichloroacetic acid
Cryotherapy
Cantharidin
Surgical excision
Laser ablation
Electrosurgery

Immunologic modulators and antivirals
Interferon alfa
Imiquimod
DPCP and DNCB
Cidofovir
Antisense oligonucleotides

Chemotherapeutic modalities
Bleomycin
5-Fluorouracil
Podophyllin
Podophyllotoxin

Other therapies
Topical tretinoin
Oral isotretinoin
Glutaraldehyde
Formaldehyde soaks
Radiation therapy
Acupuncture
Ultrasound
Hypnosis
Hot-water baths
Cimetidine

DPCP, diphenycypropenone; DNCB, dinitrochlorobenzene.
tient then files the nonviable hyperkeratotic scale with an emery board or pumice stone. During each follow-up visit, pare remaining keratotic debris and nonviable tissue not removed by the patient to assess whether wart remains.

Bichloroacetic acid and trichloroacetic acid are stronger acids used for office treatment of genital warts by many obstetrician-gynecologists.

Cryotherapy. Liquid nitrogen cryotherapy is an excellent treatment for virtually all wart types. It rarely scars but, unfortunately, is painful when applied. When liquid nitrogen evaporates, skin is cooled to \(-195.8^\circ\text{C}\). Liquid nitrogen is applied with an applicator or spray, resulting in a fast freeze and slow thaw. A typical procedure entails freezing a wart for 15 to 30 seconds with a 1-mm rim of white frozen tissue surrounding the wart. This is followed by a thaw time of 20 to 30 seconds (Figure 2). Sometimes, 2 cycles of freezing and thawing are performed to achieve maximum tissue destruction. Repeat treatments every 2 to 4 weeks until resolution.

Cantharidin. This blistering agent, derived from Spanish fly extract, is applied to the affected area,
which is occluded for 24 hours to cause the epidermis and HPV to slough. It is an excellent treatment for palmar and plantar warts and can be used on other areas of the body; however, it should not be used on sensitive sites around the eyes, genitals, and mucous membranes, which cannot be occluded with tape. There is little pain with application, but tenderness with blistering lasts several days.

One formulation we commonly use consists of cantharidin, salicylic acid, and podophyllin. After it is applied, the area is covered with occlusive tape for 2 hours before being washed with soap and water. If a large, tender blister forms, it may be

Figure 4 – A “doughnut” wart appeared 4 weeks after a small wart seemed to have been cleared by cantharidin. The wart at the edge matches the edge of the blister that was present at the initial treatment. Doughnut warts occur in up to 5% of patients treated with cantharidin and are less common with liquid nitrogen.

Figure 5 – This perianal wart with stool demonstrates the difficulty patients have in caring for the large, cauliflower-like masses often produced by human papillomavirus in these areas (A). The same mass of warts is shown immediately after carbon-dioxide laser vaporization (B). The area as seen 3 weeks later; note the excellent re-epithelialization (C). The small papules represent hair follicles from which the new epithelium regenerates and spreads laterally to heal the wound by secondary intention.
drained with a sterile needle to alleviate the discomfort (Figure 3). Repeat treatments every 1 to 2 weeks.

An annular wart (sometimes called a “doughnut” wart) is a side effect of treatment with cantharidin and, less commonly, with liquid nitrogen. It can occur in up to 5% of patients, usually within 3 to 6 weeks following apparently successful treatment (Figure 4). A different modality should be chosen to destroy this wart.

**Surgical excision.** This is not considered first-line therapy, since the potential exists for significant scarring. Excision may be performed in the office using local anesthesia. Recurrence is possible, because all of the virus particles may not have been removed, even when a patient appears clinically free of wart.

**Carbon-dioxide laser ablation.** This is not considered first-line therapy by many practitioners. Carbon-dioxide laser therapy has cure rates ranging from 27% to 100% and has proved to be an excellent tool in the treatment of difficult warts (Figure 5). A recent report noted a 64.1% cure rate at 12 months and a 71.7% patient satisfaction rate. Instruct patients that a scar—often flat and nearly imperceptible—will form. Hypertrophic scarring also can occur (Figure 6).

**Vascular lesion laser.** This therapy should be reserved for patients in whom other treatments have failed; it is best performed by a laser surgeon who is knowledgeable about the proper wavelengths, risks, and benefits. We use laser therapy after home therapy, cantharidin, and cryotherapy have failed, although we occasionally use it as first-line therapy for large or multiple warts in sensitive locations. Several treatments often are required. During this process, blood vessels are heated and destroyed through selective photothermolysis, which produces controlled necrosis of wart and perilesional skin (Figure 7). Frequently, we pretreat with a eutectic mixture of lidocaine and procaine or topical 4% lidocaine.

**Electrosurgery.** This is most successful when unipolar low-power electrodes are used for small warts. A smoke evacuator should always be used with this modality, because wart particles may be present in the smoke plume and could infect the physician or staff. Again, patients should be warned of the potential for scarring.

**Immunologic modulators and antivirals.** The most commonly used agents in this group currently include the following:

- **Interferon.** This agent is used primarily for genital and perianal warts that have not responded to other therapies (Figure 8). Interferon achieves its effects by activating the immune system, down-regulating oncogenes, up-regulating tumor suppressor genes, and altering cellular differentiation. In the treatment of warts, interferon alfa has proved more effective than either interferon beta or interferon gamma. Interferon alfa is available in both a natural form and as a recombinant product. It is contraindicated in patients with...
Egg allergy; with systemic administration, it causes a flu-like illness in at least 30% of patients. With intralesional use, the symptoms are much less common, and they are transient, mild, and easily controlled with acetaminophen.

Intralesional injection can be performed with a 30-gauge needle or a needleless injector. Injections are given 2 or 3 times a week for a maximum of 8 weeks. One study demonstrated clearing in 81% of patients.

Be aware that interferon can be expensive when large or multiple warts are involved and that mixed results have been observed when interferon is combined with podophyllin or liquid nitrogen.

Imiquimod. This is a new home treatment for genital and perianal warts. Imiquimod is a non-nucleoside heterocyclic amine and a potent inducer of interferon alfa in humans. A thin coating is applied to each wart 3 times a week before bedtime until clearing, for a maximum of 16 weeks. The cream is left on for 6 to 10 hours (usually overnight) and then washed off. A recent study of 51 patients using imiquimod for genital warts demonstrated a complete response in 40% and a partial response in an additional 35.6% after 8 weeks of treatment and an additional 7 weeks of observation. Recurrence rates may be lower with this modality than with...
others because of heightened immune surveillance.

*Diphenylopropenone (DPCP).* Contact sensitizers are often used in children with multiple palmar and plantar warts that are not amenable to other treatments or that have been unresponsive to first-line therapies. DPCP can be placed on warts to elicit a delayed-type hypersensitivity immune response. We prefer this agent to dinitrochlorobenzene (DNCB), which can be used in a similar manner but is a known mutagen.

It is believed that HPV is an “innocent bystander” during the sensitization but, by some unknown mechanism, the body develops immunity to the virus. One study revealed a 51% cure rate with DNCB in patients with widespread recalcitrant warts of long duration. In another study, cure rates of 91% were reported with sensitization therapy. Side effects are minimal except for pruritus and vesiculation secondary to allergic contact dermatitis. On occasion, a widespread id reaction can occur.

Before using DPCP, we first apply a test patch with 0.2 mL of 0.1% solution on the gauze of an adhesive bandage for 24 hours to produce contact sensitization. One week after the test patch, a drop of 0.1% DPCP solution is placed on the wart and covered for 6 hours. Treatment may be repeated every day until the wart has resolved.

**Chemotherapeutic therapies.** These agents must be used with care to avoid potentially serious side effects.

*Bleomycin.* This agent is extracted from *Streptomyces verticillus* and is used mostly as a chemotherapeutic drug. The mechanism of action is believed to be inhibition of DNA synthesis and degradation of preformed DNA. Intralesional bleomycin is reserved for recalcitrant warts. One or 2 injections of 0.1 mL of 1 unit/mL of bleomycin has a reported 67.8% cure rate. One study notes cure rates of 47.6% for plantar warts, 71.4% for periungual warts, and 77% for warts on the extremities.

Only a small amount of undiluted bleomycin is injected into the superficial dermis of a pared, cleaned wart. Responsive warts demonstrate a hemorrhagic eschar that generally heals without scarring. Patients should be warned about the pain that is often associated with intralesional bleomycin during and following the injection and for 24 to 48 hours afterward. Some practitioners use a local anesthetic before the injection. Reported side effects include pulmonary fibrosis, hyperpyrexia, mucocutaneous disease, and anaphylaxis, but these are rare when the drug is used properly. There have been rare reports of Raynaud phenomenon.
when intralesional bleomycin is used on the distal extremities.22

**Podophyllin.** Derived from a plant resin, this agent arrests mitosis at metaphase and causes cell death; it is recommended for genital and perianal warts. The use of podophyllin in pregnant patients has not been adequately studied, but because podophyllin is teratogenic, it should be avoided during pregnancy. Vast clinical experience has shown that it is safe with routine use, despite fears of carcinogenicity that have convinced some practitioners to favor other modalities.23 If systemic absorption occurs with treatment of widespread warts, potential side effects may include fever, gastrointestinal distress, renal failure, leukopenia, and central and peripheral neurologic abnormalities.

The physician applies 25% to 50% podophyllin weekly; the patient washes it off after 6 hours. Alternatively, podoflox—a new home treatment form of podophyllin—can be tried. Its active ingredient is podophyllotoxin, a purified form of podophyllin resin. The gel form is applied twice daily for 3 days, then withheld for 4 days. This cycle may be repeated up to 4 times until there is no visible wart tissue.1 Podoflox has cure rates of 43% to 88%; the cure rates for podophyllin resin are 22% to 79%.1

Topical 5-flourouracil cream is another chemotherapeutic modality used by some clinicians. Adequate studies of its effectiveness have not been performed, however.

**Other therapies.** Some of the more commonly used treatments are listed below; they have met with varying success.

**Retinoids.** Topical retinoic acid may be applied once or twice daily for verruca plana. A number of topical retinoic acid preparations are available; their side-effect profiles vary. Many patients appear to tolerate the treatment well, although responses have been inconsistent.

**Gluaraldehyde.** A 10% gel or solution of this antiseptic is placed on the wart twice a day. It combines with the keratin to produce a polymer.24 We do not use this modality frequently because of inconsistent results.

**Formaldehyde.** This was once considered the treatment of choice for mosaic warts. It acts by disrupting the stratum Malpighi and hence the virions. It is available as a 0.75% gel, 10% solution, or 20% preparation. Most patients find the odor objectionable. The response to treatment is highly unpredictable. Formaldehyde is rarely used as first-line therapy; it may be used for large, difficult warts or when other modalities are unsuitable.

Methods such as radiation therapy, ultrasound, hypnosis, and acupuncture, to name a few, have been used to treat warts, with variable success.25,26,27 Studies of oral cinetidine have shown both modest effectiveness and ineffectiveness.28,29 Radiation therapy is used only rarely because of the potential for inducing malignant transformation. Current research is focusing on immunotherapy, including vaccination, sensitization, and antivirals such as cidofovir and antisenese oligonucleotides. For now, we must use the tools in our armamentarium to clear visible warts, decrease symptoms, and limit the spread of HPV.

**REFERENCES:**

Molluscum Contagiosum

An inflamed lesion on the side of her trunk prompted a 16-year-old girl to seek medical evaluation. The eruption was occasionally mildly pruritic and had been present for about 2 to 3 weeks. This lesion could be a wart, a skin tag, molluscum contagiosum, folliculitis, or a seborrheic keratosis. The diagnosis was molluscum contagiosum: noninflamed mollusca are also present near the inflamed lesion. The umbilication is an important diagnostic clue: its presence rules out warts and folliculitis.

Skin tags are usually seen on flexural surfaces, such as the neck or the axillae. Seborrheic keratoses are much more common in older persons. This viral infection is easily eradicated by a variety of modalities, including cryosurgery and topical acids.

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Wart

A 42-year-old woman complained of a “callus” of 6 months’ duration on the thumb of her dominant hand. The persistent lesion responded to use of a pumice stone and moisturizers, but quickly it recurred.

Diagnostic considerations included a callus, wart, dyshidrosis, psoriasis, and fungal infection.

This stubborn lesion was a wart, which would respond to salicylic acid or cryosurgery. The patient opted for the more expeditious cryosurgery. The lesion did not have the clinical appearance of a callus. Psoriasis and fungal eruptions, which are erythematous and scaly, were ruled out—as were the lesions of dyshidrosis, which are vesicular.

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Plantar Warts in a Teenage Girl

This 16-year-old healthy girl presented with a verrucous exophytic mass covering most of the volar surface of the right great toe. A similar but smaller lesion was present at the base of the second toe on the same foot. Both lesions had been present for about 5 months; they were tender and made it difficult for the patient to walk.

The chief diagnostic considerations were plantar warts, eccrine poroma, squamous cell carcinoma, mycetoma, and pyogenic granuloma—all of which occur preferentially on the foot. However, the rough keratotic surface and the patient’s age strongly suggested plantar warts; only 15% of cases occur in persons older than 35 years.

Many warts involute spontaneously. However, in this patient’s case, both the long persistence and symptoms attendant to the lesions warranted treatment.

Cryotherapy and salicylic acid are the traditional interventions and are certainly reasonable first steps. Alternatively, simple protracted occlusion via duct tape may offer fairly good therapeutic results. Imiquimod, a topical immune enhancer indicated in the treatment of condylomata acuminata, may also induce wart regression. Paring is especially important in this setting because of the low penetration capacity of this compound.

All options presented might be entertained as first-line therapy. Ablation using pulsed dye laser may also be considered, as might thermotherapy and hypnotherapy. (The latter consists of placing a hypnotic suggestion with the patient that the wart will regress; this method appears to work best in prepubertal children.)

Plantar warts remain difficult to treat reliably with any single treatment modality.

REFERENCES:

(Case and photograph courtesy of David L. Kaplan, MD, Overland Park, Kan.)
Malignant Lesions?

These 4 patients were afraid that their skin lesions were malignant. Do you share their concerns?

Dermatofibroma. A dermal erythematous nodule is located in the sun-exposed portion of a 63-year-old woman’s upper arm. Present for several months, the eruption is asymptomatic and has never bled (A).

This nodule is a dermatofibroma. These lesions, usually found on the extremities, are pigmented or erythematous nodules that dimple downward when the sides are compressed. Reassurance is the only treatment required for these lesions.

Basal cell carcinomas. A 57-year-old man cannot recall how long this asymptomatic papule has existed in a forehead crease. The lesion has never bled (B).

A 33-year-old patient says this lesion erupted a year earlier as a pimple on the side of her nose (C). Bleeding occurred only once from this otherwise asymptomatic papule.

Biopsy of the lesion in Figure B confirmed the clinical suspicion of basal cell carcinoma. The same diagnosis was made for the rolled-bordered, pearly, erythematous lesion in Figure C.

Seborrheic keratosis. A 48-year-old woman sought evaluation of this pigmented lesion, which had changed during the last few months. Located on her upper chest, the macule is asymptomatic and has never bled (D).

A biopsy may be required to distinguish the seborrheic keratosis seen here from a malignancy. Seborrheic keratoses can have many clinical appearances and can resemble a pigmented basal cell carcinoma or a melanoma.

(Cases and photographs courtesy of David L. Kaplan, MD, Overland Park, Kan.)
Condylomata and Pearly Penile Papules

Condylomata (proximal) and pearly penile papules (distal) are both evident in this 24-year-old patient. The warts were eradicated with 20% podophyllin in alcohol. The pearly penile papules had been present for more than a decade and did not require treatment.

Most infections with human papillomavirus (HPV) are asymptomatic, subclinical, or unrecognized. Visible genital warts are usually caused by HPV types 6 and 11. Other HPV types in the anogenital region (types 16, 18, 31, 33, and 35) have been strongly associated with cervical dysplasia.

The use of type-specific HPV nucleic acid tests is not justified in the routine diagnosis and management of visible genital warts. Biopsy is rarely needed to confirm the diagnosis of genital warts, except when:

- The diagnosis is uncertain.
- Lesions do not respond to standard therapy.
- The patient is immunocompromised.
- Warts are pigmented, indurated, fixed, or ulcerated.

Pearly Penile Papules and a Genital Wart

A 20-year-old man sought medical care for genital warts. The lesions on the corona of the penis are pearly penile papules—normal although somewhat rare. A wart was also noted on the shaft of the penis.

Pearly penile papules are smooth, small, dome- or finger-shaped lesions that arise after puberty, between 18 and 40 years. The lesions are angiofibromas. Their occurrence appears to have no relation to race, sexual activity, or circumcision.

Genital warts (with which pearly penile papules are sometimes confused) are caused by human papillomavirus (HPV). HPV 16, 18, 31, and 33 are the most common variants found on the genitals. The rougher, more papillated surface of a wart helps differentiate that lesion from a smooth pearly penile papule. In addition, unlike the benign papules, warts are not found in a linear arrangement on the corona.

Reassurance was the only treatment needed for the pearly penile papules. The wart was treated with 2 cycles of liquid nitrogen, each lasting 15 seconds.

Genital warts are easily transmitted via sexual contact. Recurrence after therapy is frequent because of the persistence of latent HPV in normal-appearing perilesional skin.

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- The diagnosis is uncertain.
- Lesions do not respond to standard therapy.
- The patient is immunocompromised.
- Warts are pigmented, indurated, fixed, or ulcerated.
This 12-year-old girl presented with spots on her forehead that had not responded to topical 5% benzoyl peroxide. These skin-color to light brown, flat-topped papules were typical of flat warts, or verruca plana. The comedones and papules of acne were absent, and there was no sign of the linear excoriations found in acne excoriée des jeunes filles. Keratosis pilaris generally arises on the upper arms, thighs, and buttocks.

Tretinoin often is effective treatment for these viral lesions. The topical acne medications are largely ineffective and hair care products play no causative role in this condition.

(Case and photograph courtesy of David L. Kaplan, MD, Overland Park, Kan.)
Two tiny blisters on the upper helix of a 58-year-old woman’s right ear had been present for about 1 month. The lesions had erythematous bases. A diagnosis of actinic keratoses was made and both lesions were excised under local anesthesia with excellent results.

These premalignant lesions mainly affect middle-aged or elderly persons of fair complexion who have had excessive sun exposure. Depending on their size, location, and number, actinic keratoses may be excised or treated with cryotherapy, 5-fluorouracil cream, tretinoin cream, alpha hydroxy acids, and masoprocol cream.

Acrochordon

A 43-year-old woman requested that a lesion from her left axilla be removed because it had recently become irritated. The polypoid lesion with dried terminal ulceration had been present for 17 years. This lesion was excised with an elliptical incision. Because it resembled a cutaneous horn—which may harbor squamous cell carcinoma in its base—a pathologic microscopic examination was performed. The diagnosis was benign acrochordon—also known as skin tag, soft fibroma, and cutaneous papilloma.

This patient required no further treatment. Clear-cut acrochordons may also be treated by freezing with liquid nitrogen or by simple electrodesiccation.